AMERICAN BEE JOURNAL

JOAN GASKIN
1955 Florida Honey Queen

Vol. 96 No. 5 MAY 1956

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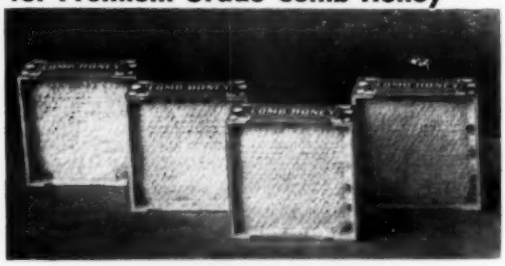

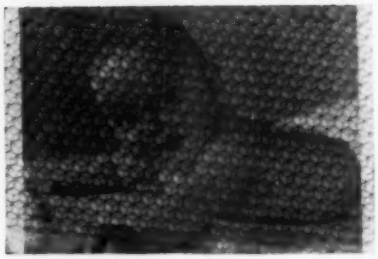

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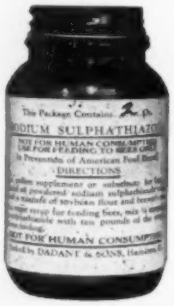

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The Business Beekeeper

Swarm Control

by Marvin Kosanke

Probably the most controversial subject in beekeeping today is the method of swarm control. There are many different methods used throughout the country. Some of these are the result of climatic conditions, different sources of nectar and the preference of the beekeeper. Others are the result of whether a colony is kept for extracted, comb or chunk honey production.

In any swarm control measure there are three important things to remember: First, it is not the method alone that is of most importance but how well the beekeeper carries out the procedure. Second, the method should not be so complicated that it requires an excessive amount of labor and time to attain the desired result. The third and final rule to be followed is good management in the apiary throughout the entire year.

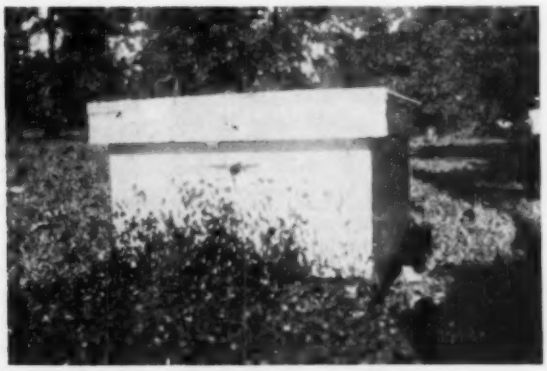
In the general management of an apiary throughout the year there are a number of basic things that must be taken into consideration at all times. These are: sufficient stores of honey and pollen at all times, queens of good stock, good equipment and proper use of it, good combs and all the knowledge of weather conditions, pollen plants, nectar secretion and the farming operations in the area of the apiary. All of these things have an important bearing on a colony of bees at one time or another and so a good knowledge of them is very important the year around in the management of an apiary.

Like most beekeepers I start my seasonal swarm control measures early in the spring by clipping the wings of the queens as early as possible. It can be done much easier and faster when populations are still relatively low than to wait until the colonies have nearly reached their peak.

A good colony in early spring.

The next operation takes place just prior to fruit bloom. An empty super is placed directly on top of any colony that needs room. I do not use a queen excluder at this time because the super is placed on the hive not only for storage of surplus honey but for the queen to lay in as well. In addition, the first inspection is made for queen cells at this time. From now until well into the major honeyflow the inspections are made at least every ten days; or if time permits, once each week until swarming tendencies have abated. During the regular inspections for queen cells prior to the honeyflow the progress of each colony is carefully observed and additional room is given if the colony needs it. It is very important to stay ahead of the colony at this time so that there is ample room for its needs at any time.

Part of an apiary at the beginning of the honeyflow.



Hiving a swarm.

At the start of the honeyflow the queen is confined to the two brood chambers and an excluder is placed between the top brood chamber and the first super. The supers should always be carefully checked to see that the queen is not present in them. If the queen has been laying in any of the supers they should be checked in ten days for queen cells. If any are found they should be destroyed.

About the last week in June I do not check any colony for queen cells that did not have any previously. Only colonies that have shown a tendency to swarm are checked now. They are still checked for several weeks unless they have decided to stop swarming preparations in the meantime.

In addition there are several other things a beekeeper may do to relieve swarming tendencies if he wishes to do so. Namely, these are to have the apiary at least partly shaded during the summer months, provide additional entrances to the hive, place quarter inch blocks between the inner and outer covers and between the bottom board and the lower brood chamber for additional ventilation. These things are not always entirely necessary but they do help in a great many instances.

In conclusion and with all these facts in mind it is always well to remember that the unexpected may happen at any time. There are probably never two seasons alike, at least in succession, so if one has all things as they should be and uses good judgment he probably will have a successful season.

Wisconsin

Chunk or Bulk Comb Honey Production

by Carl Kalthoff

In producing bulk comb honey two essentials are necessary. They are: A locality with a supply of nectar producing plants in quantity, and of some duration of blooming period. The second is to have young queens on hand when needed.

In our production of chunk or bulk comb honey, colonies are operated in single story standard 10 frame hives. Spring management mainly revolves about three operations: Feeding where necessary, clipping queens' wings, and dividing colonies.

Combs of honey are saved from the previous fall flow and a few colonies in each yard are run exclusively with regular deep hive bodies to acquire these combs.

These full combs of honey are exchanged for empty combs where colonies are short of stores early in the spring, mainly during early March. All colonies are hefted at this time. Light weight colonies are opened and inspected to note condition. If healthy and queenright, combs of honey are given. If any have American foulbrood, all combs of honey, plus all empty combs are removed, and frames of foundation substituted. Liquid sugar syrup with sulfathiazole is fed till frames of foundation are built into comb. The removed combs of honey and empty combs are burned.

This treatment only applies to colonies with light infection. Where heavy infection is found, the bees are killed, all the combs burned and the hive parts are scraped clean and washed in strong lye solution.

As soon as nectar and pollen become plentiful, dry sugar is fed if feeding is still necessary. The sugar is placed in the inner cover.

As soon as possible, generally commencing around the middle of March, all colonies are thoroughly inspected. During this inspection queens' wings are clipped.

A record is kept on the inside of the metal cover and reads like this: 3-15-55-CL-Q. The numbers stand for March 15, 1955 and CL-Q for "clipped queens." As long as the clipped queen remains with her colony no other record is made as the first record of her clipping will always tell us her age. A queen clipped in the spring of 1955 was raised or superseded in 1954. Any colonies found queenless at this time are united with queenright colonies.

To replace these, and to make increase, colonies are divided in early April. Colonies to be divided should have from 6 to 8 combs of solid brood. For each colony to be divided, we need a hive body with eight empty brood combs, one comb of honey and a division board feeder. Top feeding with a tin pail or jars placed over the hole in the inner cover will do as well, but an extra empty hive body is needed. Remove three of the empty combs and place the comb of honey next to one of the inside walls.

From the colony to be divided, remove three combs of emerging brood and the queen and place next to the comb of honey in the prepared body, followed by one empty comb, then the feeder, and finally the remaining four combs.

The seven combs left in the colony being divided are moved to one side of the hive and the space left vacant is filled with the three empty combs first removed from the prepared body. Replace the inner cover, put a queen excluder on and set the new division on the excluder, (the hole in the inner cover is left open).

Ten days later remove the upper body, provide it with top and bottom, and place it in a new location in the yard with reduced entrance, plugged tightly with grass so it will be several days before the bees will be able to get out. Or move it to an outyard. Refill the feeder and give another comb of honey if it is needed. Also place some dry sugar on the inner cover. This is the last time we have to supply feed to the increase, as from here on they get plenty from outside sources.

The colony left on the old stand, should have some nice queen cells to be used for requeening other colonies or to place in nucs, leaving a cell or two with the colony from which the division was originally made.

When the new queens have started to lay, combs of emerging brood are added from colonies that can spare them.

Colonies to be divided should have two year old queens, as the propensity for supersedure is greater than colonies headed with one year old queens, thus securing better queen cells. Any colonies having two year old queens not being divided at the time of making divisions will receive a nuc with queen cell, placed on top of the hive, with a double screen between the hive and nuc, the old queen being killed prior to the main honeyflow, and the nuc united with the main colony by newspaper method.

As most of our colonies are requeened this way each spring, it is not necessary to raise a lot of queens artificially. Those that we do raise, are raised by the Miller method. We first used Dr. Miller's own method as described in his "Fifty Years Among the Bees," but found it too slow, so substituted a newly built comb for the frame with starter.

For the past two years we have again used Dr. Miller's original method, but instead of using two strips of foundation, we use four pieces as pictured in Laidlaw & Eckert's "Queen Rearing," page 43, and supply the breeder queen with a division board feeder full of feed. By this system, a partly built out comb with sufficient eggs can be removed every three days. This comb is then placed in a cell building colony.

As colonies build up in the spring, shallow extracting supers are added above excluders. Some seasons these supers are already added before making divisions and the supers are removed and placed on colonies not being divided.

When the main honeyflow arrives, all extracting supers but one are removed from the stronger colonies, and each one of these colonies is given a chunk comb honey super next to the brood chamber above the excluder, and the extracting super placed above the chunk honey super. Extracting supers removed from these colonies are given to colonies not being run for chunk honey.

Chunk comb honey supers are supplied with eight frames of foundation, and two light colored combs, placed one on each side of the super. This results in uniform building of comb, and all combs will be capped at the same time.

It is seldom that we produce more than two chunk comb honey supers to a colony.

When the required number of chunk comb honey supers have been produced for our packing requirements, all colonies are reverted back to extracted honey production.

With young queens, some equalizing of brood, and getting our chunk honey produced by colonies headed with young queens, swarming is a minor problem. Any chunk honey producing colony making preparations for swarming, has the chunk honey super or supers removed, and is Demareed and supplied with extracting supers.

Missouri

SOCIAL SECURITY FOR THE BEEKEEPER

Under the amended social security law, beekeeping and other related activities that go with it are considered farm operations.

The beekeeper is, therefore, a farm operator for this purpose; and any profit he makes after subtracting his business expenses should be reported for social security credit provided it is $400 or more in 1955 or subsequent taxable years.

The beekeeper or other self-employed person should report his earnings on the income tax forms 1040 and Schedule F before April 15, 1956. The social security tax is 3% on net earnings up to $4200.

There is a special provision in the law that enables the small operator who keeps his records on a cash basis to gain some credit in social security even though he shows no profit or very little profit from his business. Farm operators, including beekeepers, who have gross income from their business of from $800 to $1800 annually may take half of such amount as credit in Social Security, even though the actual profit was less, and pay the tax accordingly. Farm operators with gross income over $1800 who may have net profit less than $900 or even a loss may elect to pay the social security tax and receive credit for $900. These provisions are of great advantage to the small operator who is trying to build up his credit in social security.

All beekeepers and farm operators are urged to make sure they understand their rights under social security, and take the necessary steps to establish credit. Social security benefits are now substantial. Many older men can qualify with as little as 2 years of self-employment.

For details see your nearest social security office. Act without delay. Social Security Administration, District Office, Quincy, Illinois.

—W. J. Wagy

In Memoriam

Louis H. Scholl

Louis H. Scholl, prominent beekeeper of the early days, passed away in New Braunfels, Texas, on March 26 at the age of 75. For some years he was among the most extensive operators in the state. Old timers will remember him as an exponent of the divisible brood-chamber hive and bulk comb honey. He was a former member and officer of the National Beekeepers Association, Texas Beekeepers Association and Texas Honey Producers Association.

Mr. Scholl was a pioneer in foulbrood control, serving as the first State Apiary Inspector from the office of the State Entomologist. He later served as Representative to the Texas State Legislature, and was instrumental in the creation of the Texas foulbrood law of 1913, which is still the basis of the present law.

Scholl was a regular contributor to various beekeeping magazines. For many years he conducted the columns *Beekeeping in the Southwest* in Gleanings in Bee Culture and *Southern Beedom* in American Bee Journal. In 1916 he founded *Beekeepers Item* and served as its editor for some years. Failing health caused his retirement from beekeeping some years ago.

Beekeeping Expenses In Nebraska

According to tests in Nebraska in general over the State compiled by E. W. Hamilton beekeepers with 100 or less colonies spend 6.1 hours on each colony; 100 to 499 colonies they spend 4.1 hours; 500 to 999 colonies 3.8 hours and over 1000 colonies 3.3 hours.

A Portable Extracting Plant

by John Wetz

Several years ago I began to think that a good portable extracting plant would be a fine thing. Several different things were tried and improved on until I have arrived at what I think is a pretty good extracting plant on wheels. It is roadworthy, has its own 110 volt electricity, a 20 gallon steam boiler fired by gas, it is steamheated, has a water-jacketed heating tank to heat honey before straining, a float controlled honey pump, Junior Brand capping melter, 2 twelve frame homemade radial extractors with steam coils under bottoms to warm cold fall honey, exhaust fan to ventilate in hot weather, 4-basket Neises strainer and 225 gallon storage tank.

This outfit is intended to keep two persons busy. One of them works inside extracting and uncapping. The other takes off honey and replaces supers, doing any other yard work he has time for. When we extract directly into barrels at the yard, the one working outside changes the barrel filler from one barrel to another. There is an automatic shutoff for the pump so it doesn't need to be watched. Usually my wife extracts the honey, unless I have a boy hired, while I carry supers of honey.

The floor space is small, but things are arranged so there is plenty of room for one person to work. The supers come in on a slide at table height on your left and are uncapped there on the left side of the trailer. This uncapper is my own design. It is a rotating shaft covered with swinging cotter pins, hanging like the hammers in a farmer's hammer mill. There is a table to slide the combs across. It is adjustable for height to regulate how deep we uncap. (Most of our extracting combs are spaced 8 to a 10 frame super. We use shallow or 6¼ combs almost entirely because Langstroth combs are too hard to make time with.)

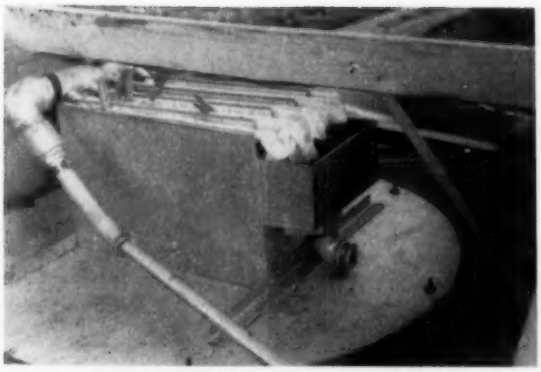
The Brand Melter is under the uncapper and the warming tank under that. Cappings are ground up by uncapper and flow like liquid down a

Portable outfit and cab hitch (Pictures by Mrs. Walter Apt, Wetz sister. Lloyd Forrer, a neighbor, did the welding, helped build the trailer and set up equipment)

Close-up of the outfit, electric plant on front. Note overhang for hitch. Everything is easy to get at.

At the yard one man removes the honey with acid.

He shoves supers into house and takes out empties.



Neises strainer cleans the honey.

One of the four baskets of the strainer.

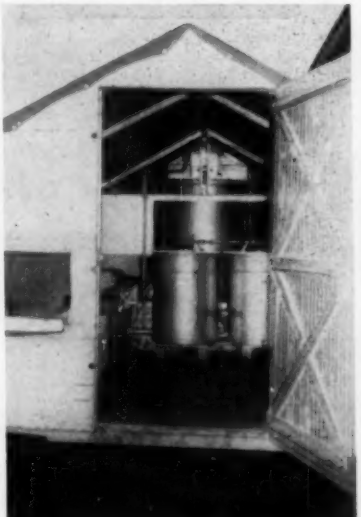
Inside, showing hookups, extractors and storage tank.

At home, honey may be pumped from storage tank into other containers in the home plant.

baffle into the melter. Melter honey overflows into warming tank.

The combs are put into an extractor as they are uncapped and when the extractor is full it is started. It will take care of itself pretty well until enough is uncapped to fill the other extractor, then it is turned off, the second one turned on and a few combs uncapped onto the table while the first one stops. Then the uncapped combs go into a empty shell on the slide on the right side of the trailer and the first extractor uncapped filled again. The empty combs in supers are slid down the slide so the person outside can pick them up and put them back on the hives. Twelve frame radials seem small, but they work good on warm honey as it will extract in 5 to 6 minutes. Our honey is warm from the bees, because most of the supers are only inside a little while. My wife has extracted a barrel an hour, but 300-500 pounds per hour is more common. It all depends on how warm it is and how full the combs are. We have 120 shallow supers to a yard and have done them all in an afternoon. We put 120 barrels full through it this last summer.

The honey flows from the extractors into the warming tank under the



A glimpse through the door showing the equipment.

Mechanical uncapper, adjustable for depth of cut.

capper and melter. When the level in this tank reaches a certain point, a float switch turns on the pump which pumps until the float comes back down. The honey goes through the strainer and into the storage tank.

In actual practice we drive this rig to the bee yard and extract all that is ready, coming home at night with the honey all extracted and the supers put back on the bees. We can haul the honey in the big tank which holds 225 gallons, or drain it into 5 gallon cans at the yard, or pump it directly into barrels at the bee yard. This last year we put most of it into

barrels at the yards and left them there or winched them into a pickup truck and hauled them with us. We do some custom work for some beekeeper friends and are able to drain their honey into cans out of this rig. If we haul the honey home in the big tank, it is pumped into other tanks in the building when we get home.

One big advantage of this outfit is that we don't have to haul combs of honey great distances and then spend more time hauling the empties back and putting them on. We also have little trouble with robbers, comparatively. Most of the honey is extracted during the honeyflow. When there is no flow, there is no need to put the supers on and they are piled up criss-cross for the bees to rob out. This makes a big fuss for a little while till they all find the wet supers, then things are almost as good as if there was a honeyflow.

The fact that the honey is being extracted as it is taken off gives me time to do necessary yard work. My helper is busy extracting instead of manipulating canvas and robber cloths on a load of honey. We don't have to make a special trip to bring the empties back to put on. When we pull out with our honey we are done at that yard until time to come back and get more honey.

Another advantage of extracting immediately after taking the honey off is that we are able to utilize all brood found in the supers. We use no excluders, so have some of this. We simply drop the combs of brood into a super by themselves and put them on a weak colony somewhere in the yard.

We operate our bees with a 40 colony yard as the unit rather than individual hives. Supers are stored at the yard during winter and spring. We use all kinds of equipment, but everything in each yard is uniform. We have one 8 frame yard, with ½ depth supers, a Modified Dadant yard with 6¼ Dadant supers, a Jumbo 10 frame yard with 6¼ 10 frame supers, 10 frame yards with 6¼ supers, and 10 frame yards with 5¾ supers. All this equipment stays at the yard where it belongs unless it is needing foundation or repair, in which case it goes home until ready to bring back. In this situation, a portable rig is good too, in that available equipment always fits what you are going to put it on. We try to extract before the bees are out of room and find wet empty combs are a good stimulant for the storing instinct.

Illinois

THE 1956 PRICE SUPPORT PROGRAM

The U. S. Department of Agriculture published the complete honey price support program in the April 13, 1956 Federal Register and copies are available.

The program for the 1956 crop is substantially the same as the one last year. It provides for farm-storage loans and purchase agreements on U. S. Grade C or better extracted honey packed in 60-pound or larger containers in approved storage if it is not of objectionable flavor. Beekeepers and cooperative associations can apply for loans or purchase agreements directly to the Agricultural Stabilization and Conservation (ASC) county officers.

For the states of Montana, Wyoming, Colorado, New Mexico, and states west thereof, the support prices are as follows: White and lighter table honey—9.9 cents a lb. Extra light amber table honey—9.4 cents a lb. Nontable and other table honey —7.9 cents a lb.

For all states east of Montana, Wyoming, Colorado and New Mexico, the following support prices apply: White and lighter table honey 10.8 cents a lb. Extra light amber table honey 10.3 cents a lb. Nontable and other table honey 8.8 cents a lb.

The American Beekeeping Federation requested the same support price for the West as for the rest of the country at 80 per cent of parity. Both requests were denied.

Beekeepers have from April 1, 1956, through December 31, 1956, to apply for loans or purchase agreements if they live in the states of Florida, Georgia, South Carolina, Alabama, Mississippi, Louisiana, Texas, New Mexico, Arizona and California. In all other states loans and purchase agreements will be available from July 1, 1956, through December 31, 1956.

Those interested in participating in the support program are urged to obtain a copy of the regulations. The official title is "Part 434—Honey, Subpart—1956 Honey Price Support Program." Just write to the Sugar Division, Commodity Stabilization Service, U. S. Department of Agriculture, Washington 25, D. C., or a copy may be obtained through your county ASC office.

Officers of the Federation have been assured that the export subsidy program will be reinstated should a surplus of honey occur.

Our Cover Picture

Joan Gaskin, 1955 Florida Honey Queen

What to do when two queens reign? Joan Gaskin was Florida's Queen for last year and Betty Ann Markham is Florida's Queen for this year. Well, if Betty will just wait, we'll let her grace our cover later in the season. (Later—she didn't wait. She got married). Just the same she is so good looking we will still save the place for her.

In the picture Joan is giving Commissioner of Agriculture, Nathan Mayo, a sample of orange blossom honey at the Tampa Fair where she greeted the visitors at the honey exhibits, passed out honey samples and gave away bottles of honey which were offered as prizes in a drawing staged by the exhibitors. She made various public appearances including several other fairs, especially the North Florida Fair at Quincy.

Florida selects a queen each year at the annual meeting from candidates sponsored by local associations. Miss Gaskin, seventeen, was sponsored by the Tupelo District Association. She is the daughter of Mr. and Mrs. George Gaskin of Wewahitchka. Mr. Gaskin operated several hundred colonies of bees and was one of the leading producers of tupelo honey. Joan has worked with bees ever since she was old enough to handle a smoker, particularly during the extracting season when the whole family helps get the honey off the hives and into the drums. (Information from F. A. Robinson, Sec. of the Florida State Association)

The Swarm, A Sudden Departure

In the picture (Kotec Photo Co., Los Angeles) apparently several swarms have combined into one cluster and probably there are a number of virgin queens with the bees. So there must have been some first swarms before these came together. Either that or the colonies from which the swarms issued built queen cells to supersede old queens and the swarms that came out did so with virgins. In any event unless this multiple cluster can be broken up properly and hived, as the intent evidently was because of the two divided hives on the ground, the working force of a number of colonies of bees has been lost for the season by the sudden departure of field bees and some of the young bees that took part in this flight. Often swarming is a beautiful sight but a disheartening one.

The Swarm, A Sudden Departure

by G. H. Cale

Swarming is Nature's way of increasing the number of colonies of bees. The individual colony may fluctuate in size but every emerging bee only adds to the total population of the colony itself.

In order to understand the behavior of swarming let Dr. M. H. Haydak (University of Minnesota) tell the story:

Swarming is a natural phenomenon in the life of bees. One reads a statement to the effect that if it were not for swarming, there would be no honeybees in the world today. Therefore, in order to control so deeply seated a habit successfully, we should clearly understand the sequence of events that leads to swarming. By fitting together all the pieces of information that we have now available, we can obtain quite a clear picture of what is happening in any overwintered colony in the spring.

Early in the season the bees still are in a relatively compact cluster in the hive. As the season advances, the bees begin to occupy more and more space. At any given temperature there is a certain number of bees per unit area present on the comb with brood. As the temperature becomes stable, the number of bees per unit area is also stabilized. In the spring there are 27-35 bees per area of 100 cells. Because the young bees have a tendency to seek and remain in the warmest place, the newly emerged bees remain on the comb and the older bees have to move out. Experiments with marked bees showed that bees 1-3 days old remain on the brood comb, while 4-10 day old bees are displaced. However, these bees, because they also like warmth, do not move far from the brood comb, but remain on the combs adjacent to the brood combs, where they begin to clean cells. When the queen comes to such a comb, she starts to lay immediately and the young displaced bees begin to feed her and the larvae that subsequently appear. If the queen does not find the cells ready for her, she returns to the brood nest. Therefore the egg-laying activity of the queen is governed by the displaced nurse bees and she can deposit only as many eggs as there are cells prepared by the nurse bees for her. The warmer the brood nest, the greater number of young bees will be displaced. A colder brood nest tends to diminish this displacement. Knowing the density of bees, the number of sealed brood cells, one can theoretically compute the number of displaced bees in the future, i.e., the space they will occupy and prepare for egg laying.

In a strong colony, sooner or later, there will be a disproportion between the number of the displaced nurse bees and the space available for egg deposition. The jobless, displaced nurse bees become excited. The circle around the queen is formed in a very close proximity to her, and the bees in the circle become very excited, shaking their abdomens. They constantly and persistently offer food to the queen, even pushing their heads under her head and thorax. Sometimes the queen, while resting, places her head inside a cell, as if trying to escape from the surrounding bees. The latter, however, increase in number and force the queen to start egg laying. The number of bees in the circle increases to 22 or more bees, the latter constantly offering food to the queen. Those in front of the queen sometimes jump on top of her and perform a shaking dance ("joy dance") lasting 3-4 seconds. Thus the queen is chased throughout the hive. As soon as the queen is around the swarm cells the bees do not bother her. She approaches the swarm cups and deposits eggs in them. As soon as the queen larvae appear the displaced nurse bees can lavishly supply them with food. At the same time the bees stop feeding the queen. The latter feeds herself on honey, deposits less eggs and the size of her abdomen diminishes. This decrease in egg laying results in further increase in the number of the jobless nurse bees. The latter fill out all the available space in the hive, sometimes even hanging outside—and those are the bees that leave with the swarm, "the active swarm bees." At the time of swarming the queen is actually chased out of the hive. The age of bees coming out with the swarm is mostly between 3 to 21 days. Field bees continue to work and it was observed that the number of the field bees coming in and leaving the hive

Queen substance (see ABJ July, 1955, Dr. Butler) apparently has something to do with keeping the bees satisfied. Here the bees are collecting queen substance from the body of the queen. If the abundance of queen substance fails it initiates supersedure. (And swarms)

is about the same before and after swarming. Both external (honeyflow, weather, etc.) and internal (egg laying, type of brood nest, etc.) factors have a great influence on swarming and may accelerate, slow down or completely stop the preparation for swarming.

So here you have—the ever present and always ruthless law of supply and demand. The bees have found their solution for it. It is the most logical solution in nature. However, in modern beekeeping, when man tries to become an employer of his winged friends, he inherits all the difficulties going together with the problem of unemployment. A good "employer," who foresees the coming difficulty and tries to alleviate the symptoms before they become acute, usually wins—the bees in full force will continue to work for him. Otherwise they will leave, looking for better conditions.

So we see that swarming is a natural means for the distribution of colonies of honey bees. Swarms may issue at different seasons but more swarming occurs in spring and early summer than at any other time. Strong colonies, disposed to swarm, may do so more than once. The first swarm will often be accompanied by the old queen and a second or even third swarm will issue from the same colony with virgin queens within a week.

Colonies with old queens swarm more than colonies with young queens. Since the bees will, in this period of prosperity, endeavor to replace the old queen which provides a number of new queens, some of which emerge with the swarm. Therefore the more prolific the queen the less liable her colony is to swarm provided the brood nest does not become crowded.

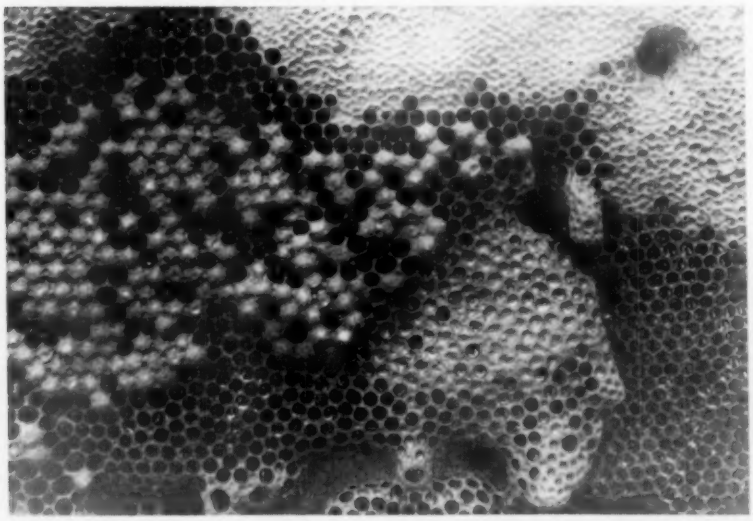
Swarm issuing from colony in single hive. This used to be a frequent occurrence before we learned to use two or more hive bodies in management.

Some think that the bees will not swarm if *the hive* is not crowded, but that is not necessarily true. Bees swarm out of attic lofts where they have room enough for a hundred colonies, and they swarm because *the brood nest* is crowded. Two or more hive bodies may be given to a colony in year around management and yet the bees will swarm, if the brood nest is crowded.

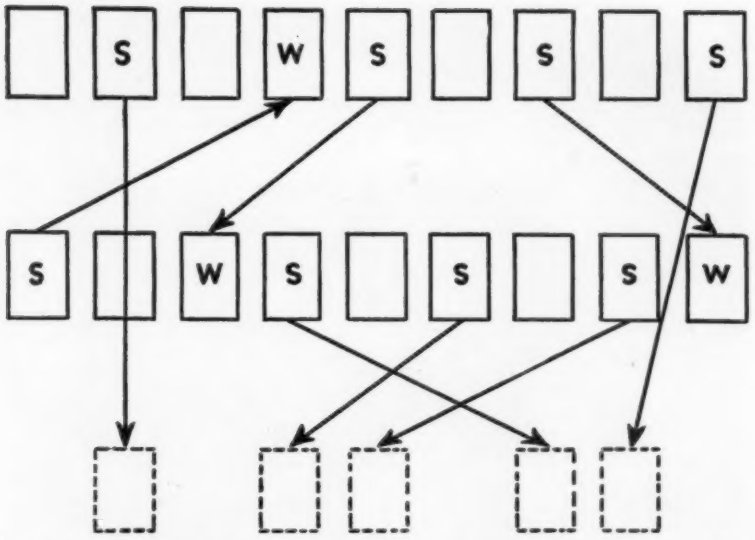
According to George Demuth (famous comb honey producer of Indiana and specialist for the United States Department of Agriculture; author of Farmers Bulletin 1039 "Commercial Comb Honey Production") the principal cause of swarming is a crowded brood nest.

Some strains or races of bees are more persistent swarmers than others. So by selecting queens for breeding purposes from colonies or strains or races which show the least tendency to swarm, considerable progress has been and can be made in curbing the swarming habit.

To circumvent swarming the beekeeper has resorted to many manipulations, and plans for the prevention and control of swarming fill the literature. In earlier days, when bees were kept in a single hive, swarming was one of the most serious problems, ranking with wintering and bee disease. With better understanding of the needs of the colony for brood rearing and colony activity it was realized that a single hive body was not sufficient but that two or more hive bodies were necessary. This sharply reduced the swarming difficulty. More abundant stores could be given to the colony, both honey and pollen, by the use of the additional room and this room also adapted itself



Poor combs contribute to swarming — broken brood patterns, useless cells, drone cells, areas of no value.



Follow the idea in this diagram in using relocation in swarm control. Exchange colonies with swarm or supersedure cells (the S colonies) with weaker colonies (W); or set them in new places (dotted lines). But never in front of their old locations.

to a better manipulation of the bees and brood within the colony itself.

All successful remedial measures for swarming, whether applied after the colony has acquired the "swarming fever" or applied to all colonies alike previous to the swarming season, have one thing in common—a temporary disturbance in the continuity of emergence of young bees. The methods employed fall under three headings: (1) Removing the queen from the hive. (2) Removing the brood from the hive. (3) Separating the queen and brood within the hive.

One of the earliest applications of point 3 was that practiced by W. Demaree who first proposed his plan in the American Bee Journal in April 1892. Here it is:

"When your apiary is as large as you want it, what would you give to be able, by a simple, practical manipulation at the beginning of the swarming season, to hold all your colonies at full strength steadily through the entire honey harvest? You can do it by practicing my new system for the prevention of swarming: and if you have the ingenuity to apply proper management to suit the *new condition*, your surplus yield will be larger than by any other method.

"My plan of preventing swarming is accomplished by one manipulation right at the commencement of swarming. Only one hive and its outfit is used for each colony.

"I begin with the strongest colonies and transfer the combs containing brood from the brood chamber to an upper story above the queen-excluder. One comb containing some unsealed brood and eggs is left in the lower brood chamber as a start for the queen. I fill out this brood-chamber with empty combs. Full frames of foundation may be used in the absence of drawn combs.

"When the manipulation is completed, the colony has all of its brood with the queen, only its condition is altered. The queen has a new brood nest below the excluder, while the combs of brood are in the center of the super, with the sides filled out with empty combs above the queen excluder.

"In 21 days all the brood will be hatched out above the excluder, and the bees will begin to hatch in the queen's chamber below the excluder; so a continuous succession of young bees is well sustained.

"If my object is to take the honey with the extractor, I tier up with a surplus of extracting combs as fast as the large colony needs the room to store surplus. Usually, the combs above the excluder will be filled with honey by the time all the bees are hatched out, and no system is as sure to give one set of combs full of honey for the extractor in the very poorest seasons; and if the season is propitious, the yield will be enormous under proper management."

There are modifications of the Demaree plan based on the idea of applying it without waiting for the swarming fever to manifest itself.

One comes from E. S. Miller of Indiana who wrote about it in the American Bee Journal for June 1950, under the title "Double the Crop With No Swarming."

"About the time of apple bloom confine the queen to the bottom body and keep her there. Just shake off the bees (and queen) from the top and let them in below. Then insert between the two bodies a third body with combs.

"Then start nuclei by taking from each top story two or more combs of emerging bees for each nucleus and give each nucleus a laying queen. Add combs of honey and pollen. These are our booster colonies.

"Just before the clover flow begins place all the brood except one comb in the top story over an excluder and replace with drawn combs. Remove queen cells from the top 9 or 10 days later.

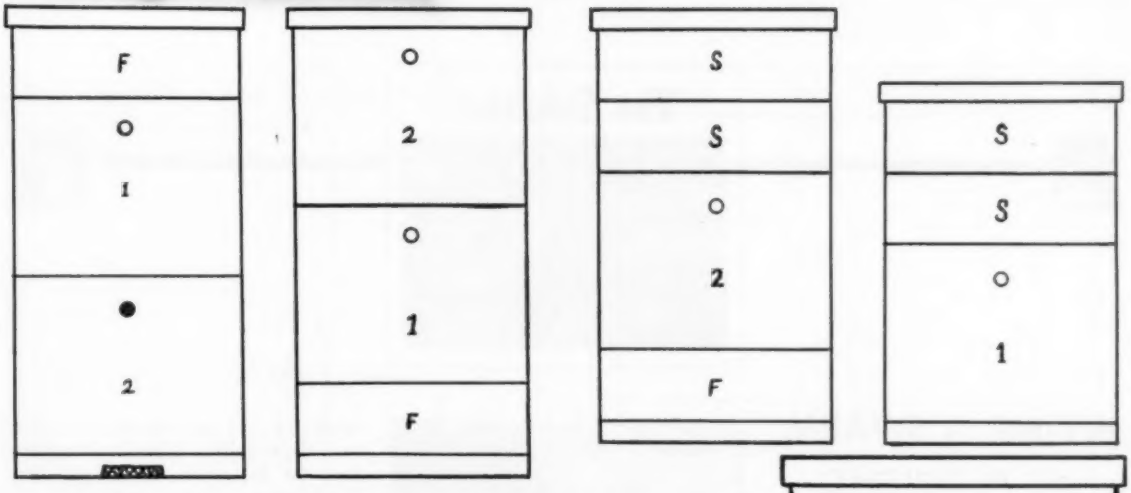
"Before the main flow, place a booster colony over each producing colony above a second excluder and a sheet of newspaper. Later shake the bees and queen from the top so that they can run below. The bees will keep the best one. This eliminates swarming, automatically requeens the colony and increases the crop."

Since swarming is not only a matter of congestion in the brood nest but also of seasonal circumstance some understanding of the field activity of the colony should be brought into the discussion. The colony that has reached a large population and is active in gathering pollen and nectar, even if in small quantities, is thrown out of balance by any break in the continuity of the daily activity.

If the field bees are kept in the hive by cold high winds or by rain and then, when weather again becomes suitable, they take once more to the field, this make and break will very frequently lead to a severe case of swarming fever.

There are several ways to get around this situation. Bees may be given a thin syrup or a dry sugar feed at the top of the hive in an empty super shell placed under the cover with sufficient chance for the bees to get up into this space and work on what may be considered an artificial substitute for field collection. This is a strong deterent if applied early and even continued until the beginning of the honeyflow.

A manipulation to take advantage of the fact that the habit of the bees in rearing brood is to carry brood rearing high in the hive, so that, for instance, in early spring most of the brood is in the top hive, is to reverse



Here is a two queen plan that automatically requeens and automatically controls swarming. The colony, with two hive bodies and a shallow food chamber (top entrance in hive above open; bottom one closed) passes winter and the beginning of spring this way. About April 1 (mid-west) reverse as indicated. About the last of April, divide as shown at the top right and add supers when needed. Give a new queen to the queenless part (usually No. 1). After the honeyflow starts set bodies back together (right) and let bees keep the queen they wish. Add supers above.

the hives, several times if necessary, to keep the most available egg laying space and brood rearing room at the top rather than below. If reversal is practiced with preventive feeding as just described it will result in a splendid expansion of both brood, nurse bees, and adult bees throughout the colony and in many seasons this manipulation alone is sufficient to control swarming.

George Demuth and Carl Killion (author of "Honey in the Comb" and one of our most expert modern comb honey producers) give one manipulation to control swarming in the production of comb honey, one which is equally applicable to the production of bulk comb honey. The colonies are brought up to full strength by the usual spring manipulations including those which we have been discussing, but, at the beginning of the flow, the colonies are reduced, usually to a single hive body packed with brood and with all the bees. The extra brood is usually distributed to other colonies used for extracted honey production, or it is used for increase. Of course, this way puts the comb honey colonies into an ideal condition to bring on swarming very rapidly.

To prevent it, colonies which are persistent cell builders, not easily controlled by the removal of queen cells, are dequeened. New queens raised in the same season are given to these colonies after 10 days and all queen cells are removed. Sometimes ripe queen cells from selected breeding colonies are given to the dequeened colonies thus allowing the new queen to mate from that colony a procedure which will positively end swarming for the season.

There is an easy yard manipulation which tends to equalize populations between the very strong colonies and the weaker colonies that is a measure of control. Colonies with heavy populations are exchanged with weaker colonies long before the swarming period. This equalizes the populations and reduces the heavy ones.

The relocation of colonies, after the beginning of queen cells, will practically end swarming if it is properly done. A description of it is given with the diagram here. An automatic prevention of swarming is to be found in the two queen system one plan for which is also given in the diagram.

Another plan which seems rather amazing is that colonies with heavy populations may, a month or more before the beginning of the main honeyflow, be deprived of 2 or 3 pounds of their bees without injuring the honey crop. Depriving the colony of brood by making divides which is also frequently followed is far more serious in its effect on the actual crop than the removal of the bees. We have found by removing these bees, taking them as package bees in package cages, and establishing them as nuclei wherever they are needed, does not seriously impair the honey producing power of the colony from which they are taken but it does effectively reduce the tendency to swarm. If this practice is resorted to previous to a month before the main flow it will do the colony little harm and it will keep swarming down.

The Sideliner

HIVING A SWARM AT MIDNIGHT

by Thomas Doonan

In the two years I have been answering swarm calls directed my way by the Police Dispatcher in our city, this was one of my most interesting experiences.

It was well after dark one evening about the middle of June when my wife called me at work and relayed information regarding a swarm in a tree at a home in the north section of Des Moines. Both husband and wife at this residence worked downtown every day, and they insisted that the bees be removed that very night to avoid any possible trouble with neighborhood children the next day.

I would not be free from my job until 10:30 p.m., and after that I would have to drive home and get all the necessary paraphernalia ready, but that was OK with our new friends, they were perfectly willing to wait up, no matter how late. All they wanted was an affirmative answer from me.

The more I thought about the situation, the more intrigued I became with a chance to learn something new, and it certainly wouldn't be under the sun either. We obtained all necessary details from the temporary custodians of the bees so I would know exactly what to take along. I included an AC extension cord, floodlights, and my Speed Graphic with flash gun, and film of course. We even persuaded one of my co-workers and his wife to go along with us and watch the fun, as they had never seen a swarm hived, period, let alone one after night.

When we arrived at the scene of the "crime," several pairs of willing hands helped to quickly unload the gear and get it in place, while I made the camera and its accessories ready. We found that we could use the floods only for work lights, and even then not directly on the swarm, as the bees, like other insects, are attracted by the brilliant lights, and will surely destroy themselves on the intensely heated bulbs.

Doonan all set to hive a swarm at midnight.

I placed the open hive on top of a step ladder directly below the swarm, and when all was in readiness, I gave the tree limb a tremendous shake. Seldom have I even seen a cluster of bees so completely and cleanly fall into a hive body.

Almost sooner than it takes to tell it, the hive of bees was placed on a sheet, as illustrated in the picture. In the photograph, another frame of foundation has been added, and I am using one of my indispensable aids in hiving swarms, namely, a pail of sugar syrup. This is both a temporary food for the colony, and a good persuader to guide the confused insects where you want them to go. The old saying "you can lead a horse to the water, but you can't make him drink" certainly does not apply to bees and sugar syrup, because any time you lead bees to syrup, it is a foregone conclusion that they will partake of it.

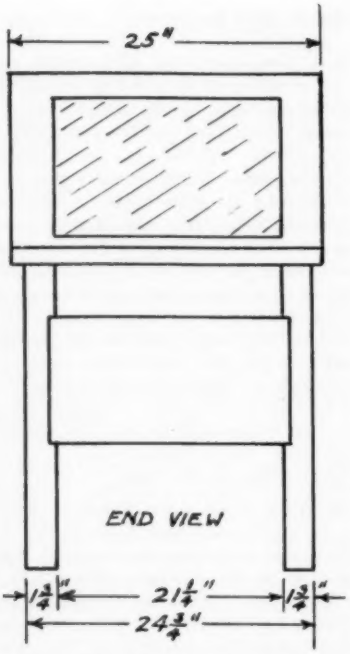
To get back to my true story, it was exactly midnight when the bees were hived. About fifteen minutes later they had been safely stowed in the car and we were ready to take them home. It wasn't a large swarm—only about two pounds, but our curiosity regarding such an experiment had been completely satisfied, and we were glad that such an opportunity had come our way.

I would not recommend the practise of attempting to hive *every* swarm after dark; there are far too many variables involved. The one I have described for you happened to be a "natural," in other words the location of that particular swarm made everything in my favor. If the bees are clustered in such a place as to make it difficult, if not impossible, to shake the entire swarm into your hive on the first try, then it would be much better to leave them until daylight, when they can at least see what you are trying to do to them.

Iowa.

Australian Honey Prices High

The Australian Bee Journal for November reports an "astounding buoyancy" in honey prices which are at an all-time high. They report gum honey as having been sold at 1/1 per pound (about 12c a pound). There has been some forward selling for 1956. Bear in mind that the folks "down under" are just now having their honey harvest.



A USEFUL SOLAR EXTRACTOR

by Newton Beadle

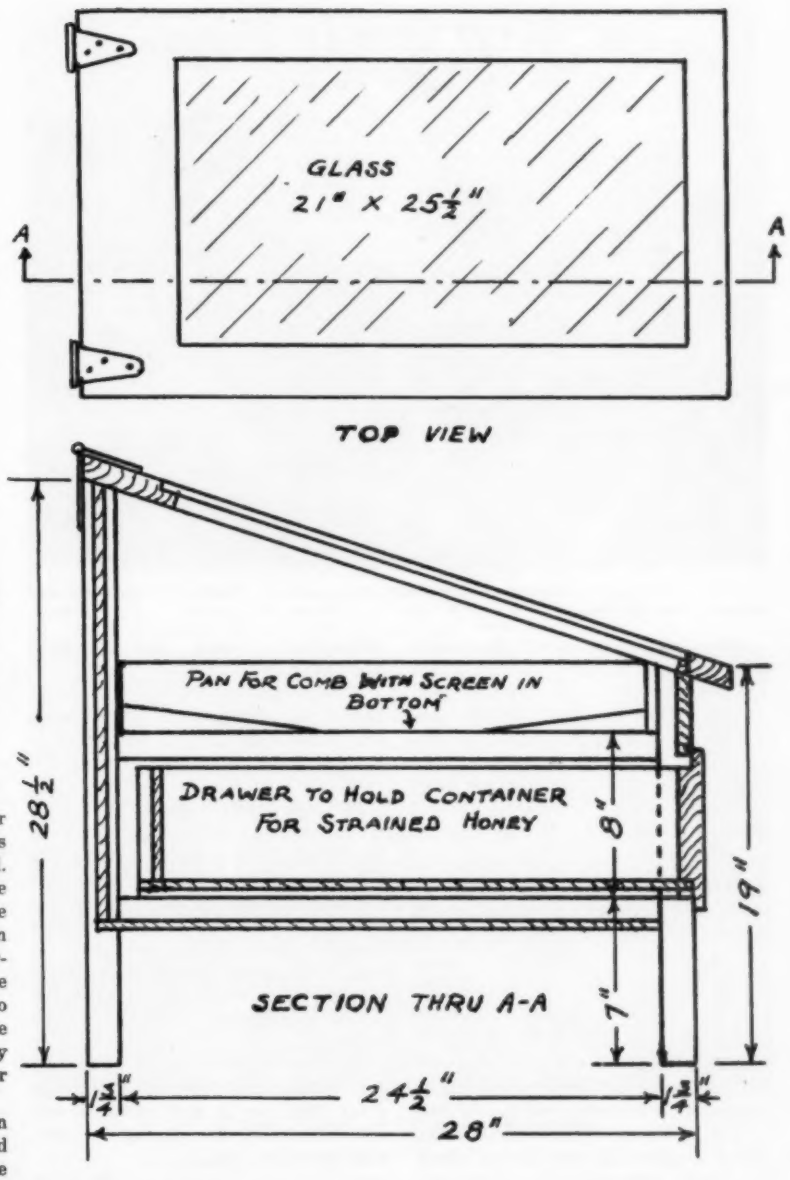
The drawing of this solar extractor explains itself. As you see, the glass top is inclined instead of horizontal. The pan is made of tin plate with the opening covered with a piece of fine bronze mesh similar to that used in milk strainers. The drawer underneath makes it convenient to remove the liquid honey; a container, also made of tin plate being set in the drawer. I made two of these but any vessel that would fit in the drawer could be used.

The whole must be bee-tight when finished. In order to ensure this and to hold the heat better, the top of the box where it comes in contact with the glass lid is covered with felt weather stripping.

The glass is a piece of auto windshield and quite heavy. The whole extractor when finished is given several coats of lacquer paint and will withstand the elements in good shape.

The cost is about $3.00 and I think it will pay for itself in a short time. Of course, an extractor of this type does not take the place of the usual extractor used in the production of extracted honey, but it does make possible the processing of combs that are unsalable as well as combs and chunks partially filled.

Jamestown, N.Y.



STAIRWAY TO THE COMBS

Recently I spent a few moments watching the incoming bees as they entered their hive and disappeared in the darkness of their home. I noticed that the great majority that alighted on the bottom board continued walking toward the back of the hive. A few crawled up on the backs of the sisters in order to reach the bottom bar of the frames. It appears that most of the bees walked all the way to the back of the hive and crawled up the back wall in order to reach the frames. This may explain why it is that the front bottom area of the brood frame is many times left unoccupied.

One solution is to allow the bees to build burr comb steps on the bottom board but modern breeding has developed strains that don't like to build burr comb. The best solution would be to place a thin piece of lath on the bottom board about two inches inside of the entrance and parallel with the entrance. This way the incoming workers can enter via the nearest route and will probably use this space in the brood comb that many times is wasted.

Bill Porter
Puerto Rico

A City Clover Field

by Wm. H. Hargett

In this vacant lot white clover volunteered every year but finally it disappeared and ragweeds took its place.

There was a time when the vacant lots in St. Louis grew as luxuriant a stand of white clover as any field in Ohio. However, much to the displeasure of the city's amateur beekeepers, as well as its 17,000 hay fever victims, this clover, or for want of a better name, "wild alfalfa," has given way to the ugly and noxious ragweed.

For years this clover could be found growing on every vacant lot in the city, with utter disregard for soil conditions. It flourished along the back streets and the river bank, and any place where it would not be trod upon. Sometimes growing higher than a man's head, every plant would have hundreds of long, snow-white, finger-like blossoms, which, by the middle of June, would be swarming with bees. The blossoms lasted about two weeks and sent out a perfume, indescribably sweet, upon the night air.

Toward the end of July the clover begins to dry up and the easily shattered seeds are as attractive to birds as the blossoms were to the bees.

It is generally believed that such clovers are a contributing cause of hay fever. Such a belief, however, is entirely unfounded. Practically all clovers, certainly the species described above, have long since discharged their pollen and gone to seed, by the time the hay fever season starts, which is about the middle of August for Missouri and midwestern states.

No one seems to know just why our wild alfalfa failed to return after 1945, or if and when it will return, but we are hoping it won't stay away too long.

Missouri

Minnesota Registration

The 1955 session of the Minnesota legislature amended the bee law making it mandatory that every person owning bees shall file with the state entomologist an application for registration which shall give the exact location of each apiary, the number of colonies and other required information. The application is to be accompanied by a fee of $1.00 for 1-20 colonies; all over 20, 5c per colony, with a maximum fee of $100, based on the county on May 25th. A certificate of registration and payment will be furnished the beekeeper. Half of all the money shall be used for carrying out the provisions for the Inspection Service and half will be used by the University of Minnesota for research in bee disease. This amendment resulted from a resolution unanimously adopted by the State Beekeepers' Association. The information, under this change, will aid inspectors in their work; help to set up control against harmful spraying; and will aid in warning beekeepers in spray areas.

Quick Way to Introduce a Queen

A quick way to introduce a queen in a two-story hive is to raise the cover and puff in a lot of smoke to drive the bees down into the lower story. Then take the top story off as the queen will be in the bottom. Smoke the bottom story from the front. As the bees come up and go over the sides, just wait and kill the queen when she comes to the top. She will walk on top of the bees to get away from the smoke and she is easy to find. Leave her body in the hive and put the cage with the new queen between the hive bodies and close up. You are all done in about five minutes. This saves a lot of time looking for the queen and the bees will accept the new queen 100%.

Vernon Powis, Michigan

"Starting Right with Bees"

This 100 page book from the A. I. Root Company has been revised and is now in the eleventh edition. The present one is edited by Walter Barth, Managing Editor of "Gleanings in Bee Culture" and Editor of "500 Answers to Bee Questions." There are twenty-one well illustrated chapters dealing with a discussion of who can keep bees, the classes of bees, equipment, apiary locations, securing bees, the management of bees, comb and extracted honey production, honey as a food, marketing, and the diseases and pests of honeybees. Copies may be obtained from the American Bee Journal for 75c or from Gleanings.

Water Trough as Weather Indicator

In our climate in England we like to have a still dry day for working at the out apiary and a dull rainy day to work in the shop. For us the problem is solved by early watching the bees on the surface of the water at the drinking place. If there is a light breeze from the east and the bees are briskly collecting water the day will be favorable. If the wind is south of south-west and no bees are working at the trough we feel sure rain will fall during the day.

A. H. Bowen
Cheltenham, England

THANKS FOLKS
Give Us More

Quite a few readers responded to our request for "Sideliner" stories. But, we need more, especially practical how-to-do-it items. General, but readable, material is fine but more of that comes than we can use. On the other hand, good, practical material is scarce. See what you can do.

More About the Pennsylvania Two-Queen Plan

Readers are referred to the article "A Two-Queen System in One Hive Body" by Edwin J. Anderson which appeared in our August 1955 issue on page 310. Here, Mr. C. F. Douart asks some pertinent questions about the system and Mr. Anderson gives the answers:

How is the hive requeened if one queen fails?

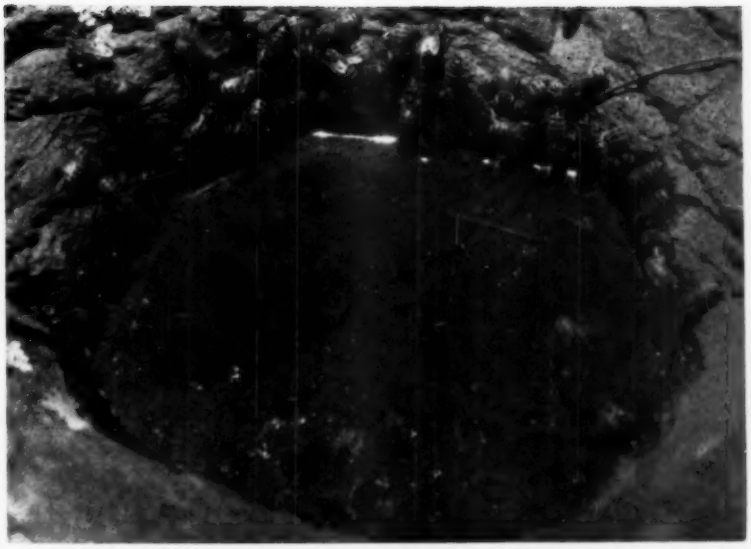
If one queen fails that half of the colony is isolated and requeened either by placing a piece of cardboard over the queen excluder or by replacing the excluder with the inner cover for a week or until the colony is safely requeened.

How can a food chamber be provided without another hive body like the brood chamber? There will never be much honey in a restricted brood chamber for winter.

Last winter ten of the double colonies were wintered in a single story with 100 per cent success. They were fed in late fall to fill the brood chambers. Because the hive bodies are jumbo depth they hold enough honey for winter when well filled. We also wintered two colonies successfully with a shallow food chamber.

Why will not two separate colonies operated with standard equipment, with the same attention and know-how, produce as much honey on a year-round basis?

Regarding production, the two-queen colonies did better than two single colonies in comb honey production the first year, which was a poor one. This year they have not done as well in proportion as they did last year. This was a good year for honey production and single queen colonies did unusually well. This two-queen system is, of course, in its early stages of development and it will take at least four years to determine its real value and the best method of handling a two-queen hive of this type. This winter we plan to check the hives carefully in view of queen survival.



FAVORITE "SPA" — Some of my bees at their favorite drinking place, a natural bowl in a large rock. At times there was hardly room for another bee along the rim. I tried to set up another "bowl" with a jug and spigot dripping water into it but the little creatures of habit ignored it, even in summer when the hole was dry. Finally I filled the hole with the hose and they were back there in no time! —Dr. J. P. Zollinger, New York.

Cub Scout Bee Month

During the month of October, Cub Scout Bee Month, we held open house for the various Scout Packs that wished to visit our place and see the process of extracting and handling honey. We also made talks to some of the boys at their school meeting places. We estimate that we talked to or showed our operation to approximately five hundred Cubs.

One of the Cub Dens that visited us was Den 4 of Pack 57C of Los Angeles (see picture). After showing the boys our honey room and talking to them, they informed me that they wished to sing a composition by Mr. Woody Hilger, the father of one of the Cubs. We enjoyed their singing and thought readers might like to hear the words. The song is to the tune of "Davy Crockett."

Bee Song

Born in a hive by an old oak tree
When we hatched, our wings were free
We went to work from morn 'til night,
Collecting honey with all our might.
Buzzin' ——busy buzzin'
Serving our beehive well.

Come the Fall, and we're so worn,
All tuckered out, our wings all torn,
But we have to gather more and more
We should just buy it at the store.
Buzzin' ——busy buzzin'
Serving our beehive well.

—R. K. McCaffree, Gardena, California.

How The Beginner Produces A Crop

by **W. W. Clarke, Jr.**

Extension Apiarist

Pennsylvania State University

The secret of producing a good crop of honey is to have the following conditions present at the time of the honeyflow: 1. Have a strong colony of bees that are the proper age, about two weeks old, for gathering the nectar. 2. Have sufficient supers in which to store the crop. 3. Have a good source of nectar near the colony. 4. Have good weather to gather the crop. All of these except the last are within the grasp of all beekeepers including the beginner, although it may mean moving the bees to special crops.

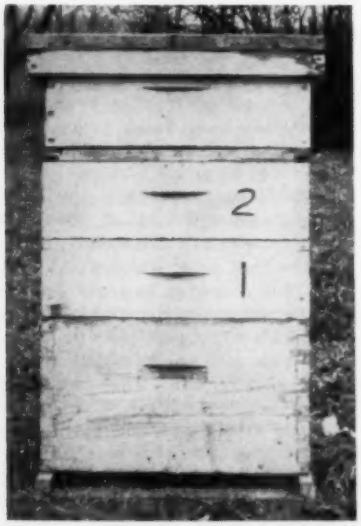
Strong colonies are maintained by starting early in the spring, about six weeks ahead of the honeyflow, to encourage the queen to lay more heavily. If the colony is weak in the early spring, it should be united with another colony. One strong colony will usually produce more than twice as much as two weak colonies.

Until supering or honeyflow time, there are no differences in management for comb and extract honey production. Bees should be housed in 1½- or 2-story hives and only supers containing extracting frames should be added prior to the main honeyflow in order to give the queen space to produce bees and build a strong colony. Extract honey production continues in this manner but for comb honey production the colony is usually reduced to one hive body when the first comb honey super is added as the honeyflow begins.

It is very important to provide proper storage space in the form of supers. There is less of a problem in supering for extract honey production. An empty super is added at the top of the hive, directly under the lid and inner cover as soon as the bees are well established in the last super. Since a strong colony of bees may carry in as much as 20 pounds of nectar in a day, it is important not to let them become crowded. As the honeyflow slows down, supers are added less quickly so there will not be many frames of unsealed honey at the end of the honeyflow. The advantage to top supering is that the bees are not disturbed while the beekeepers check to see how much space is needed. Also, the lightest super is lifted to the very top of the pile. The bees should be disturbed as little as possible so they will maintain their working morale. Usually it is only necessary to lift the lid and the inner cover to see how much space is being used. If a queen excluder is to be used, place it above the brood nest just as the honeyflow starts. Instead of top supering, some beekeepers like to move the full supers up and add the new ones just above the brood nest. Probably they are worrying about the amount of time it takes the bee to climb to the top of the stack to deposit the nectar. This is a needless worry, since the bee that collects the nectar does not store it in the super. A house bee takes the honey from the field bee and usually stores it first in the brood nest. As it is processed, it is moved up to be stored in the super.

For comb honey production, some manipulation is needed. The new su-

Manipulation of supers in cut comb honey production and, at right, the removal of No. 1 super when full.



Single, one and a half story hive for producing comb honey with queen excluder under the shallow super.

per is placed on top when the bees are well established in the super below, but as soon as the new super has been occupied by the bees, it is shifted down to the position just above the brood nest with the partly filled super on top of it, and a third super is placed on top of the stack. This one is moved down when the second one is two-thirds full. Comb honey supers should be prepared in advance of the honeyflow; once the honeyflow has started, it is too late to get ready. All of the tops and exposed parts of the sections should be painted with paraffin to make cleaning easy.

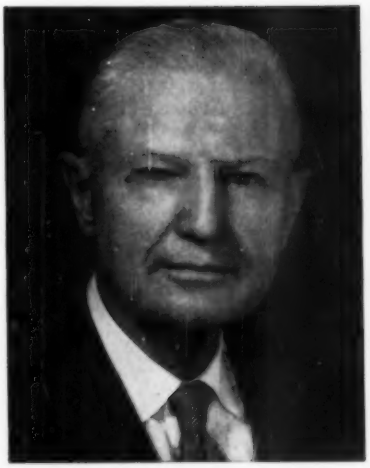
A second method of producing comb honey begins with the bees in a story and a half hive. When the honeyflow starts, the shallow super is lifted and the comb honey super is placed directly over the brood nest; a queen excluder goes on top of the section super; and the shallow super is placed on the queen excluder. It is felt that the shallow super, which probably contains some brood, will attract the bees up through the section super and they will work the section more quickly. Supering is then done as described before, except that the section supers are placed under the queen excluder. Never place a queen excluder under section supers.

For home consumption, or even for limited sales in many areas, comb honey should be produced as bulk honey in unwired frames. Less skill is required to produce bulk comb honey and the end product is the same. Each frame will hold three to four pounds of comb honey. Use thin surplus foundation which is slightly smaller than the frame and fasten it in with melted beeswax or paraffin. Cut comb or bulk honey may be produced over a two-story colony. To get the bees started in the super, add it as the honeyflow begins. As soon as the bees start to draw the foundation, place a queen excluder under the super and add a second super similar to the first method for comb honey production.

Supers used in either comb honey or bulk comb honey production must be removed as soon as they are full and capped, so they will not become travel stained. (Travel staining is the darkening of the cappings by the bees as they move over it). Extract honey supers can wait for the end of each honey crop. The best comb honey is that which is produced during a heavy honeyflow, and with the exception of buckwheat, only the lightest honey should be produced for sale as comb honey.

Honey and Cancer Series

No. 2 **by D. C. Jarvis, M.D.**



Our pioneer ancestors here in Vermont learned the rudiments of Vermont folk medicine by observing what plants were sought out by animals suffering from wounds, fever, stomach and bowel disturbances; by watching a bear grubbing for the roots of a fern; by noting how the wild turkey during a rainy spell compels her babies to eat the leaves of the spice bush; by seeing a wild animal bitten by a rattlesnake confidently chewing snakeroot.

It was noted how plants and trees protected their buds by a sticky substance; how ants, wasps and honey bees were attracted to this sticky substance on the buds and the bark of plants, bushes and trees; how the dairy cow liked sticky things such as honey and molasses. The pioneer Vermonter reasoned that if this sticky substance on buds of the pine tree, and the bark of the spruce tree and honey attracted insects and animals it undoubtedly contained something that would also protect him from sickness and if sickness came would help him to recover. So the buds of the pine tree were steeped in water on the stove and honey added to the resulting liquid when strained. This mixture was found to be of value in treating sickness of the breathing tract. Experiments were started with the chewing of gum from the spruce tree. It was discovered this chewing would bring about the disappearance of a sore throat in an hour's time. Chewing this same gum brought about the disappearance of a head cold in one to two days. If this spruce gum was chewed at varying intervals such as once each day one would be free from head colds.

Because honey was a sticky substance and it was liked by dairy cows the Vermont pioneer began experimenting with it. He learned when it was applied to a burn on the body the relief was immediate. No blistering appeared and healing was rapid. When he cut his finger he applied honey to the cut and wrapped a clean strip of cloth around it. The result was prompt healing with no infection taking place. He reasoned if honey helped the skin of his body it ought to help his whole body and prevent the appearance of sickness.

I have spent many years trying to learn what factor exists in the sticky substance on buds of plants and trees, the bark of the spruce tree and in molasses and honey. I have studied mink, chickens, hens, cats, two kennels of dogs, a herd of registered goats, two herds of dairy cows, calves, bulls and farm horses in an effort to learn the answer. After much checking and rechecking and doing a problem in multiple corelation between plants, bushes, trees, insect life, animal life and human beings it boils down to potassium in an acid medium associated with trace minerals as the factor present that explains the results observed. Nature always shoots a shot gun instead of a rifle.

It took me five years to learn the symptoms of a lack of potassium in dairy cows and ten years to work out the lack of potassium in human individuals. After all this work I can see the real need of a daily intake of potassium. It can be obtained in fruits, berries, edible leaves and edible roots but the most practical way for the individual to guarantee his daily intake of potassium is to keep honey in the home and take it daily. I find it requires five teaspoonfuls of honey each day to keep me free from head colds and other acute sickness.

Potassium draws moisture to itself. We say it is hydroscopic because of this ability to draw moisture to itself. Harmful germs and parasites such as lice and worms cannot continue to live in the presence of an agent that withdraws moisture from them. That honey draws moisture to itself because of its potassium content is shown by cake and cookies in which honey was used as the

sweetening agent being more moist two weeks after cooking than when just baked. Honey is sterile because of its potassium content. No germs can live in honey the honey literature shows.

With the changing seasons when their systems require certain adjustments some unerring instinct causes birds and animals to change their diet. They eat the food produced at that season of the year. The deer that roam the green mountains of Vermont are a good example of eating food that appears with the changing seasons. The native Vermonter who lives close to the soil follows this plan as much as possible changing his food intake with the changing seasons. Should not you and I try to eat the food nature gives us with each season.

Wild creatures when sick or wounded resort to the ancient remedies of nature which are medicine, pure air and complete relaxation. While I marvel at their capacity to heal themselves my greater wonder is reserved for the majestic faith with which they undertake their self healing. When in doubt as to the wisdom of some procedure we can secure needed help by turning to the animals and studying them for they are guided by instinct and will give us the right answer.

When approaching a consideration of cancer cannot we anchor to the experience of our pioneer ancestors and profit by their study of nature's children. If we do so we will banish white flour foods, wheat cereals as the birds, and hens do. We will change to corn. We will take honey each day as being one way we can easily get the potassium we need to keep down bacterial growth in our body. We will keep the body cells in a congenial environment and prevent a revolt of the cells against an uncongenial cell environment which may result in the appearance of a growth we refer to as cancer. Surgery, radium and x-ray may all help but you have your work to do if you develop cancer. You must convert suitable soil represented by your body tissues into unsuitable soil for the existence of cancer. You bring about this conversion by the food you eat, the liquid you drink and the air you breathe. In this way you change your body soil and prevent both the appearance of cancer and its reoccurence after surgery or the use of radium or x-ray.

From The Honey Plant Gardens

Melvin Pellett, *Director*

Anise Hyssop

We have quite a number of inquiries about the honey plant Anise Hyssop, how to grow it, the amount of seed to sow, etc. This is not so easy to answer. Anise Hyssop is among the very best honey plants we know where it does well. However, it is not usually the easiest to grow. In pioneer times Anise Hyssop grew wild in some of the middlewest and northward into Canada. With the cultivation of our land the plant has largely disappeared. The small seed starts slowly and does not compete easily with our fast growing annual weeds so, in many situations, weeding will be required to get the plants started ahead of the weeds.

Once established, the plant grows easily in localities suited to it. Under some favorable conditions it will naturalize and spread by itself. When conditions are right a fraction of an ounce of the small seed may start hundreds or even thousands of plants; or a total failure may result if the seedbed dries out at the critical time. Many times we have observed volunteer Anise Hyssop seedlings coming up thick between the cultivated rows only to disappear on a hot day before they become established.

However, sometimes weather conditions have been right for the survival of volunteer seedlings between the rows to grow into a solid bed. We have the best average success in planting seeds of perennials when we sow the seed in winter to come up in the cool weather of early spring. This is most of the time successful if the seedbed is in partially protected area. I am unable to outline any one procedure for planting Anise Hyssop to apply to anywhere near all conditions; so can only suggest that each interested individual try it out to learn how it will grow under his conditions and his method of handling. As is the case with some honey plants, reports indicate that Anise Hyssop does not attract the bees in every locality. For us and many places it is second to none when we consider both the vigorous bee activity on the flowers and the length of blooming period.

Anise Hyssop, one of the very best honey plants.

Red Bud

Red Bud (*Cercis canadensis*) is one of the most popular flowering trees for landscape planting. Very early in the spring before the leaves appear the branches and twigs are heavily loaded with reddish purple flowers. This small tree is native to this country, found occasionally from New York to southern Michigan, southern Iowa and south to western Florida

Red bud, one of the most popular flowering trees for landscape planting.

and Texas. Bees work the flowers vigorously and it furnishes a liberal bee pasture to stimulate spring brood rearing where it is sufficiently abundant.

The leaves of American Red Bud are round or broadly oval and heart shaped at the base. It is a comparatively small round headed tree. The very numerous clusters of flowers make it conspicuous during blooming period. Also attractive in shape and foliage, this tree is much sold by nurseries.

Purple Loosestrife

We have a letter from Fred Pruim, Illinois, sending us a sample of plant material. He states it comes from a plant that grows six feet tall and seems to grow from the roots each year. He thinks it may be from something he has planted although he did not plant it where it grows. It is in a ditch where the soil is damp but no water in it. Mr. Pruim says the plant started to bloom July 1st and was still blooming in September with bees on it every day.

Purple loosestrife, especially suited to damp or wet soils.

The sample of plant material appears to be Purple Loosestrife and the description well fits that plant. It grows readily in most situations if given cultivation. It is especially suited to damp or wet soils and under such conditions has spread in some localities to cover acres. We have had a number of reports from northeastern states indicating major honeyflows from Purple Loosestrife where it is sufficiently plentiful. The above is an example of a plant volunteering in its natural habitat. Purple Loosestrife is one of a number of honey plants which will naturalize and spread of their own accord if introduced in situations suited to them. The seed, which is very small and often plentiful, requires very moist conditions for germination. When conditions are just right, a great many seedlings may start as compared to the measure of seed sown. Under the most favorable circumstances, results might be obtained by merely scattering the seed in early spring where the plant is wished to grow. The plant is perennial and one-year plants of the species will transplant readily early in spring before new growth has started.

Purple Loosestrife (*Lythrum salicaria)* is a pretty sight in bloom and a nice addition to flower gardens. Several varieties of the species are common offerings in the horticultural trade.

Arkansas Regulations

The Arkansas Apiary Board in its April bulletin is calling attention to the fact that the law requires that anyone desiring to move bees into the State, give the time and destination of such moves to the Board at Little Rock. On receipt of such notice the State Inspector is to see that the shipment is accompanied with proper credentials of the State from which the bees originated and that the spot where the bees are to be located in Arkansas is at least four miles from other apiaries.

Iowa State Apiarist Reports

The Iowa State Apiarist Reports will no longer be published in furtherance of legislative economy. Beekeepers who wish past copies can still get them without charge and postpaid, as long as the supply lasts. Write to F. B. Paddock, Extension Apiarist, Iowa State College, Ames, Iowa.

Bee Stings

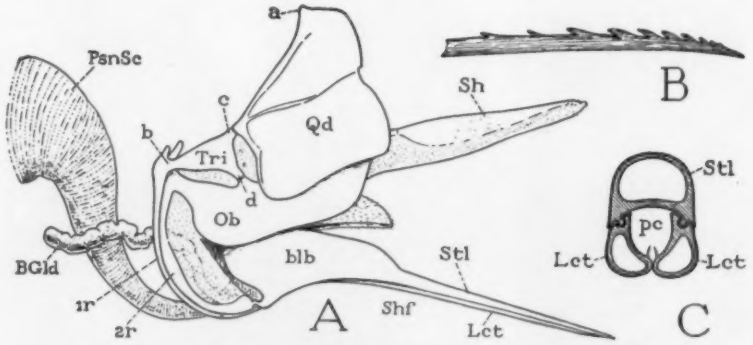
by Dr. Mykola H. Haydak
University of Minnesota

The word "Bee" usually calls to one's mind either of two words: Honey, sweet, pleasant and possibly endearing, or sting, painful, frightening maybe even terrifying to some. While only very few people are allergic to honey, the sting usually causes discomfort to many. A beekeeper should be especially aware of this, since in some cases his bees may be responsible for the trouble. It is the duty of everyone who keeps bees to know the action of the sting and the possible remedies to alleviate the sufferings of the affected person.

The sting is a defensive weapon of bees. In the honeybee it consists of two lancets, barbed at the end and kept together by an ingenious device, several plates with muscles attached to them, and nerves which control the movements of the sting. The hollow portion of the sting, the bulb, is connected with a conspicuous sac, containing poison. The latter is produced by a long tubular gland—the acid gland—which opens into the poison sac, serving as a storage place for the liquid secreted by the gland: the bees must always have enough "munition" to defend the hive. There are no muscle fibers of any sort connected with the poison sac, except for a few that are fastened to the sac from some of the surrounding organs and which presumably serve as suspension muscles. The poison then is not squeezed into the wound made by the sting as is popularly thought but rather it is propelled out by a special pump located inside the bulb. The bee usually loses its sting in the attack. However, the sting alone continues to pump the poison as long as the nerve clump which accompanies the sting sends impulses to the muscles operating the sting. Therefore, the first act of a person stung by the honeybee should be to remove the sting. The sting should be scraped off with a finger nail, hive tool or similar instrument. If the sting is pinched off, then the entire content of the poison sac will be forced into the wound. It appears that only the secretion from the acid gland is necessary to produce the poisonous effect of the sting. The function of another gland connected with the sting—the alkaline gland—is rather obscure.

The bee venom is quite a complicated substance. A freshly secreted drop of venom is water clear, of an acid reaction, tastes bitter and has a peculiar aroma which can be detected when the poison is rubbed between fingers or when a very large number of bees are attacking. Bee venom is readily soluble in water. Formic acid is present but it is not an active part of the venom. The poison is free of bacteria and, to a certain extent will prevent their growth. It contains protein, hydrochloric and phosphoric acids, sodium, calcium, magnesium and sulfur. Crude bee venom contains 1.0 - 1.5 per cent histamine, which is one of its active components.

Hahn and co-workers obtain two other fractions of bee poison. Component I proved to be a weak acid with a high phosphorus content. It caused convulsions in the experimental animals. The Component II was weakly alkaline, contained protein and was only slightly soluble in water. It inhibited the respiratory center of experimental animals, sometimes causing complete paralysis. Both the convulsion and the paralysis producing components contained sulfur. The active principle of bee venom is a salt-like combination of



The sting of a worker bee. A, entire stinging apparatus, left side. B, end of a lancet. C, cross section of shaft of sting. (From "The Hive and the Honey Bee" by Grout et al)

Paper No. 920 Misc. Journal Series, Minnesota Agricultural Experiment Station, St. Paul 1, Minnesota.

the two components. A slightly acid medium keeps the salt in solution. Recently a number of German researches have been further investigating the composition of the bee venom.

The visible skin reactions to the injection of the bee poison—welt formation, reddening, itching, hives etc. are due to the histamine present in the bee venom. In addition to containing histamine as a component bee venom also causes liberation of histamine from the tissues, thus increasing the effect of the sting.

Effects of an excessive number of bee stings upon a relatively immune person are described by Haydak who, while hiving a swarm, received 150 stings on his arms. "In a few minutes after I was stung my heart started pounding vigorously and my scalp itched terribly. Next, the area around my lips became numb and there was a tingling sensation as though ants were running over them. I had the same feeling in my feet with the difference that "the ants" were running toward my knees. Then I became slightly dizzy. Meanwhile, the grass, the leaves and the sky turned white. I couldn't feel my pulse. Usually fainting is preceded by a sensation of darkness, but in my case the dizziness progressed until finally I saw only a white indefinite mass before my eyes. Then I fainted. The unconsciousness lasted for about half a minute, according to the testimony of persons who saw me collapse. I felt dizzy, had an urge for defecation after which I almost fainted. I lay on the ground for about 10 minutes. The leaves, the grass and the sky gradually assumed their normal colors. All the symptoms lasted for about 15-20 minutes. The swelling on my arms completely disappeared in two days. There was no increase in my sensitivity toward bee stings afterwards."

On the other hand, beekeeping literature mentions a beekeeper who, while hiving a swarm, received 265 stings and did not experience any ill effects.

In extreme cases of sensitivity, death may occur after a single sting of a bee. Such cases have been reported in the literature. In severe reactions, there is a feeling of constriction in the throat and chest, respiratory difficulty with cyanosis, massive local swelling, giant hives, loss of consciousness, involuntary bowel and bladder excretion, bloody and frothy saliva, and either a slow recovery or death. Such reaction may appear in 15 seconds, and usually within a few minutes. In all cases of violent reaction to bee stings, a physician should be consulted immediately. In persons who severely react to bee stings, desensitization should be attempted. A very good description of the procedure is given by McLane (Minnesota Medicine, Vol. 26, p. 1061, 1943.).

In persons less sensitive to bee stings, local application of antihistaminic ointment (such as 5% "Theophorin") is advisable. It should be applied locally at the site of the sting as soon as the sting is removed. Gentle massage should be used to facilitate absorption. For severe allergic reaction—difficulty of breathing, collapse, unconsciousness, 1:1000 adrenaline solution should be given in doses 5-10 min. (0.3-0.6 cc). Injections of antihistamine are helpful. For those who are very sensitive to bee stings, taking antihistamine pills (Theophorin, pyribenzamine or similar) or ephedrine before starting to work with the bees or immediately after being stung is advisable.

Bee venom has been used in treatment of rheumatism. Many physicians have experimented with injectable bee venom and have published reports. From the review of literature it is clearly evident that in many cases bee venom treatment brought a marked improvement or a complete cure to sufferers from rheumatic diseases. Even in the series where the general results were negative, there was a certain number of individuals who were benefited. In using bee venom as a treatment for rheumatic disorders, one has to bear in mind that in some chronic cases there is no sign of improvement until the patient begins to react to bee stings. This reaction is important and it may appear sometimes after as many as a thousand bee stings have been applied. In treating some obstinate cases of arthritis, some physicians used as many as 15,000 stings to achieve the cure. Moreover, the same individual may, at different times, react to bee sting in different ways, depending on his physiological condition. It should also be pointed out that the negative conclusions reported were drawn after the application of a relatively small number of bee stings or their equivalent in solution. Apparently more controlled experiments are desirable to bring the final answer to this controversial question.

SUGGESTED READING:

Beck, B. F. 1935. Bee venom therapy. D. Appleton-Century Co. New York and London pp. XV and 238.

Haydak, M. H. 1952. Bee venom. Report of the State Apiarist of Iowa for 1951. pp. 105 - 126.

Hodgson, N. B. 1955. Bee venom: its components and their properties. Bee World Vol. 36, pp. 217 - 222.

Barth To Texas

The appointment of Walter Barth as vice president and manager of the A. I. Root Company of Texas was announced by Alan Root, General Manager, A. I. Root Company. Barth, the Managing Editor of GLEANINGS IN BEE CULTURE, will assume his duties on July 1st, replacing the retiring Duane C. Babcock who will return to Medina, Ohio to live.

Before going to San Antonio Barth will participate in a concentrated training program at Medina and at the Root Company plant in Council Bluffs, Iowa. The Medina executive plans to move his family to San Antonio in late June.

Mr. Barth joined the Root Company organization on June 8th, 1953 as Assistant Editor of Gleanings. He was later appointed Associate Editor, Circulation Manager, and finally Managing Editor. He also took part in bee supply advertising and sales promotion. In San Antonio, Texas, Barth will become the new Field Editor for Gleanings, writing a monthly column on honey and beeswax conditions based on notes from reporters throughout the country.

Gleanings' Managing Editor completed four seasons of commercial beekeeping before entering Cornell University to major in beekeeping.

He received his B.S. degree in June 1951 and a Masters degree from the same University in June 1953. During five summer vacations from college he served as a bee inspector with the New York State Dept. of Agriculture. He obtained his journalism training with the news bureau of Cornells Dept. of Information.

During the past two years Barth has revised and edited the 3rd edition of "500 Answers to Bee Questions" and the 11th edition of "Starting Right with Bees," two beekeeping books published by the Root Company.

The American National Honey Show

by Carl E. Killion

My assistants and I found that the National Honey Show presented many problems that we had not experienced in the many years of working with our own State Show. Some shipments of honey were late to arrive and the judging was delayed until the last possible moment. Two entries did not reach us until a day after the judging was completed.

We received 101 entries from 8 states, Montana, Minnesota, Nebraska, Wisconsin, Iowa, Michigan, Ohio and Illinois. We did not receive a single entry from three of our neighboring states, Kentucky, Indiana and Missouri. Visitors from each of these states pledged entries for next year.

Three out-of-state winners visited the Fair to pick up their honey, ribbons and trophies. I am expecting a report on the show from these exhibitors. It is hoped that each will give some constructive criticism so that improvements can be made before another year.

We had one problem that we could not do much about. There were some who requested that their honey be sold and money turned over to the Institute. All exhibits remained in place until the last day of the show. On this day the Fair visitors were in a large part sport fans who came primarily to see the auto races. The result was that all honey which was not claimed was recartoned and returned to the owners by Railway Express Collect.

I wish to make some suggestion to those who entered honey or who may expect to enter at some time in the future. This suggestion is that extra precaution be used in packaging the honey for either Parcel Post or Express shipments. In all the shipments of honey to reach us only about three had properly cushioned their honey as an insurance for its safe arrival. My advice is to never ship comb honey by Parcel Post unless it is well packed with paper, straw, or excelsior thick enough on all sides to absorb the worst possible shock.

The honey and wax was shown in four large cases, 8 feet long and 4 feet in width. These were built new by the State Fair. The Culinary exhibits and trophies were displayed in two other 8-foot show cases. All material was enclosed in glass cases.

The State Honey Show and National Honey Show occupied over half of one large building. The rest of the building was for the Culinary Department of our State Fair. We were well represented in this department because they have a part for Honey Cookery. There were 158 items entered in Honey Cookery.

The total attendance at the Fair for 1955 was approximately one million, slightly less than a year ago. On two of the smaller days an estimated 20,000 people were through our building, the larger days about 85,000. Each year we register beekeepers and find that they come from as many as 20 states and a few foreign countries.

Honey Price Operations

As of March 15, as reported by the U. S. Department of Agriculture there were loans outstanding on about a million pounds of honey; and purchase agreements on 173,450 pounds of honey.

Most of the 'loan' honey has been disposed of by the beekeepers who originally sought these loans, and we assume that probably by the time this news note appears most of the honey on support operations will have been reclaimed by the original owners and disposed of elsewhere.

Russian Book

The Health Guild, 117 W. 48th St. in New York, is distributing in this country copies of the Russian book "Bees" by I. Kaalifman, translated into English, but published in Moscow.

As was suggested in a previous short editorial, the author is careful to give priority on most scientific discoveries to Russian sources. This includes the "queen substance" of Butler.

The book is generally scientific and should interest the scientific reader. Stress is given to value of pollen as well as honey as a food, the potency of royal jelly, necessity of more bees to do an efficient job in cross pollination.

The American Bee Journal is stocking a few of these books for those who are interested. It has 350 pages, is clothbound and costs $3.00.

Snelgrove's Swarming

A new edition (revised) of SNELGROVE'S "SWARMING" is just out. It carries all the value of the earlier book and has been brought up to date by Mr. Snelgrove of England. The book sells postpaid for $2.50. The American Bee Journal carries this book in stock for the convenience of its readers.

Malcolm Brown Seeks Job

Malcolm Brown carries the distinction of being among the very few we have given reading notice about in an effort to have him well placed in beekeeping. R. B. Willson sends this information about him: He is twenty-four, has a Bachelor's degree from the University of Massachusetts; a Master's degree from Columbia; and plans to go on for a doctorate. He wants to spend the vacation working with bees. He has bees of his own and he has studied beekeeping rather thoroughly except for commercial honey production. He wants to learn about that from experience. He is presently employed teaching algebra and coaching at Berkshire School, Sheffield, Massachusetts. If any reader is interested in Malcolm write to him at that address.

Questions

Last year I put up more foundation than I could use and so I had to keep it over to this year. It has dried out some and is slightly brittle. I have read that the bees won't use it readily. Is that so? Also I have read that the bees react the same way with very dry combs. —L. E. Richardson, California.

If the foundation is to be used in your supers, put it on during the honeyflow and the bees will draw it out. If it is to be used for either section or chunk honey the midrib may have become too tough and so less desirable. About the combs, sometimes when they are very dry bees do refuse them for a time. But if you use them after the flow starts this will not be as noticeable.

I have black bees that are cross and I would like to change to something more quiet. I read that Caucasians are quiet but that they are bad about gluing up the hive. Is there a strain that does not do this? —Roy J. Hoffman, Oregon

Yes, Caucasians are gentle but they do propolize badly. Some strains do not do this as much as others, but we do not know whose bees to recommend. It is suggested you try Starlines as they are gentle and good honey producers and less inclined to swarm.

Do bees have any part in the pollination of pecans?—C. F. Timmons, Oklahoma.

"The collecting of pollen from walnut, hickory, or pecan by honeybees is a common occurrence, especially during springs when there is a dearth of pollen. The collection of pollen by the honeybee from these trees has little or nothing to do with pollination. The pistillate flowers (the ones producing the fruit) are borne at the tip of the branch, while the staminate catkins which produce pollen copiously are located some distance back on the old wood. These trees are wind pollinated. The pistillate flowers are covered with a sticky substance which causes the windborne pollen to adhere. Bees are not attracted to the pistillate flowers. —W. J. Nolan, Entomology Research, Beltsville, Md.

What can I use to mark queens without hurting them? — Gordon Dondineau, Michigan.

About marking queens, the easiest thing to get is finger nail polish at the drug store. This does very well. It is not too strong. Put it in the center thorax on top.

Dr. Daniel C. Munro in "Man Alive" raises the question about honey really being predigested like milk sugar. He says: "I have tried to find if this is so but I have not been able to get an authoritative answer." Can you find out? —Lynn Reynolds, California

Milk Sugar can be compared with sucrose, or ordinary cane, or beet sugar, because both of them consist of the chemically united simple sugars. In order to be absorbed into the blood stream, lactose and sucrose have to be digested (broken by special enzymes) into their corresponding simple sugars. However, honey is a mixture of glucose and fructose, two simple sugars, which are absorbed into our blood without any previous digestion. Therefore, honey as such cannot be compared with milk sugar. Aside from this, honey contains minerals, vitamins, and some other substances which pure lactose or sucrose do not have. —Dr. Mykola H. Haydak, University of Minnesota

Recipes

Ladies, do you have favorite honey recipes? Send them in. Your subscription will be credited an additional three months for each recipe published.

HONEY CHEWS

½ cup butter
1 cup honey
1 cup walnuts
½ cup dates (chopped)

Cook butter and honey over slow heat about 50 minutes or until it forms a ball in cold water or 266°F., stir often. Remove from fire and add dates and nuts. Let cool. Cut in squares and wrap.

Mrs. Chesley Harbo
Grove City, Minn.

HONEY OATMEAL BREAD

4 c. boiling water over
2 c. oatmeal
½ c. molasses
½ c. honey
2 large tb. shortening
2 t. salt

When lukewarm, add 1 cake yeast dissolved in ¼ cup lukewarm water. Add flour to make a stiff dough. Let rise until double in size. Form into loaves, let rise 1 hour. Makes 4 loaves.

HONEY NUT ROLLS

2 cups sifted flour
3 tsp. baking powder
1 tsp. salt
¼ cup shortening
¾ cup milk
2 Tbl. butter, cinnamon
¼ cup raisins
⅔ cup honey
½ cup pecans

Sift together flour, baking powder and salt. Cut in shortening with pastry blender. Add enough milk to make a soft dough (about ⅔ cup). Knead lightly. Roll ⅛ inch thick. Dot with 1 tablespoon butter and sprinkle generously with cinnamon and raisins. Roll like jelly roll. Cut in inch slices. Heat remaining butter and honey in a baking pan. Sprinkle the pecans over the bottom of the pan and place rolls, cut side up, in honey mixture. Bake 30 minutes at 425°. Remove from pan and serve hot, glazed side up. Makes about one dozen rolls.

Mrs. Frank Byers, Illinois

HONEY—ORANGE JELLO

1 envelope unflavored gelatin
1 cup very hot water
¼ teaspoon salt
½ cup orange juice
2 tablespoons light honey
1 orange, peeled and sliced thin
½ cup shredded raw carrots
3 tablespoons lemon juice

Soften gelatin in orange juice—add hot water and dissolve. Add honey, salt and lemon juice and mix well. Cool. Add carrots and orange slices. Chill until firm.

Mrs. Ward Kruse
Sherwood, Ohio

HONEY CHOCOLATE FUDGE

(Won first prize at Minnesota State Fair and fourth at Nat'l. Honey Show in 1954)

2 c. sugar
⅓ c. milk
½ c. honey
1 t. butter, heaping
2 sq. chocolate, shaved or grated

Boil all together till it forms a soft ball in cold water. Let cool, beat until creamy, add flavoring, pour into buttered pan.

Mrs. John A. Larson
Taylors Falls, Minn.

MEETINGS

Learn and Mix in '56

University of Minnesota-St. Paul Campus 14th Annual Short Course—May 9-11

Wednesday, May 9
A.M.
8:00—Registration
9:15—The Life Story of the Bee—M. H. Haydak
10:00—Spring Work in the Apiary—C. D. Floyd
11:00—Feeding Bees in the Spring—M. H. Haydak
12:00—Lunch
P.M.
1:30—Value of Bees to Agriculture—C. D. Floyd
2:30—Modern Bee Breeding
What it is and What it may Do—W. C. Rothenbuhler
3:30—Demonstration in the Apiary of Installing Package Bees—M. H. Haydak, C. D. Floyd and W. C. Rothenbuhler

Thursday, May 10, 1956
A.M.
9:00—Management of Colonies for Honey Flow—M. H. Haydak
10:00—Honey Harvesting Processing and Marketing—C. D. Floyd
11:00—Breeding Disease Resistant Bees—W. C. Rothenbuhler
12:00—Lunch
P.M.
1:30—Diseases of Adult Bees—T. A. Gochnauer
2:30—Brood Diseases—Lecture and Demonstration—T. A. Gochnauer
3:30—Demonstration of Standard Practices of Beekeeping—M. H. Haydak, C. D. Floyd and W. C. Rothenbuhler.
6:30—Informal Meeting—Dr. W. C. Rothenbuhler will speak on "Hybrid Bees"
This is an opportunity to visit and exchange ideas.

Friday, May 11, 1956.
A.M.
9:00—Honey as Food—M. H. Haydak
10:00—Preparing Bees for Winter and Wintering—C. D. Floyd
11:00—Beekeepers and the Law—T. L. Aamodt
12:00—Lunch
P.M.
1:30—Beekeeping Movies
2:30—Question Box (a box will be provided in the class room for questions of any type. These questions will be discussed by staff members).

Iowa Annual Short Course, Ames, May 8-9

"The annual Short Course for beekeepers will be held at Ames on May 8 and 9 in the Memorial Union. The guest speaker will be Dr. Leonard Haseman, Professor Emeritus of Entomology, University of Missouri. Dr. Haseman's presentation on the use of sulfa for control of American foulbrood will be of interest to every honey producer. The two days will be complete with topics of vital interest to every honey producer. The complete program will be available by May 1."

F. B. Paddock
Extention Apiarist

Worcester County (Mass.) May 19

The Worcester County Association will hold its first outdoor meeting at the home of Mr. and Mrs. Warren Newton, 66 Gold St., Shrewsbury, Mass., May 19th at 1:30 P.M. Bring basket lunch, chairs, and table. Coffee, and cream will be served.

Adolph W. Rozenas, Sec.

Middlesex County (Mass.)—May 26

"The first outdoor meeting of the season of the Middlesex County Beekeeper's Association (Mass.) will be held on Saturday, May 26. The Club hive will be inspected, a business meeting will be held, and a picnic supper will conclude the day. The meeting will begin at 2 P.M.

"At the April meeting a new slate of officers for the 1956-1958 term was elected by the members present. Tentative plans of the new officers include the naming of a publicity committee to give better and wider publicity to our activities; the donation of a hive of bees to a young 4-H club member, or a Future Farmer of America member; and selection of outstanding speakers on bee culture for indoor meetings next fall and winter.

"At our April meeting our members brought for display, various self-styled inventions or gadgets which they have adapted for use in their beekeeping activities. Many good ideas were shown."

L. C. Proctor, Sec'y.

Westchester County (N.Y.)—New Rochelle - May 20

The Westchester County Beekeepers Association will hold its last indoor meeting at the Odd Fellows Hall, 20 Lockwood Avenue, New Rochelle, N. Y., on Sunday, May 20th, at 2:30 P.M.

The Topic of discussion will be "Swarm Controlling" and "Toxic Sprays." We also plan to start our Club Hive, which will be given to some lucky member at the end of the season.

Visitors are welcome. Refreshments will be served by the "Queen Bees."

Mrs. Alfred Roth, Pub.

Midwestern (Missouri) May 20 - Lee's Summit

The Midwestern Association will meet May 20th at Unity Farms, Lee's Summit, Mo., in the "Apple House" on Colburn Road, at 2:30 P.M. Program: swarm control, apiary location, pollination. Door prize, refreshments and tour. Everyone welcome.

Mrs. William Brite, Sec.

New Association - Peace River District

We have formed a beekeepers' association to be known as The Peace River District Beekeepers' Association, with Herve Johnson as President, Paul Emile Cote, Vice President, Maurice Despins, Secretary-Treasurer.

Maurice Despins
Falknew, Alberta

New Michiana Officers (Ind.)

At the election April 15th, the following officers were chosen: Pres., J. C. Roose, Elkhart; V. Pres., Ernest Fischer, South Bend; Sec., Owen Martin, Elkhart; Treas., Willard Phipps, South Bend.

Queen Bee Rearing Short Course—Penn State - June 18-20

The College of Agriculture at Penn State will conduct a three-day course in how to rear queen bees from June 18 to 20, 1956. The course will include discussions and actual work in the subject.

Any adult may enroll by writing to Director of Short Courses, College of Agriculture, The Pennsylvania State University, University Park, Pennsylvania.

Empire State Newsletter New York

The Empire State Honey Producers' Association will start sending a periodic newsletter to members—the first mailing to be in July. All members are urged to send in news items and a list of what they might want to buy or sell.

M. R. Carey, Sec.
1112-14 Erie Blvd., East
Syracuse 3, N.Y.

Colorado Officers

President, R. O. Green; Vice-president, Gerald Rose; Sec.-Treasurer, J. M. Smith.

Delegates to National Convention: Chester McClintock, Gerald Rose; (alternates) R. O. Green, Grover Sanders.

Research Committee: Harold Rice, San Joaquin Watkins, Gerald Rose, Wm. T. Wilson.

Lawrence County (Tenn.) Bee School

The Lawrence County Bee School, conducted by the Lawrence County Association, had an average attendance of 35 each night. Roy Collins was elected President for the coming year; W. E. Perry, Vice-President; Ralph Ring, Secretary and Earl Anderson, Treasurer. There were quite a few door prizes. Of the thirteen who were in attendance all five nights, J. F. Harlan won a copy of "ABC and XYZ of Bee Culture" and D. W. Keener a a copy of "The Hive and the Honey Bee." Lawrence county has grown to be the largest honey producing county in Tennessee.

Ralph P. Ring, County Agent

Royal Highland Show 1956 (Scotland) Inverness, June 19-22

This year's show, organized by the Royal Highland and Agricultural Society of Scotland, will be at Inverness on the site of the former Longman Aerodrome. Livestock will include cattle, horses, sheep, goats, pigs, poultry; 420 Trade Exhibitors. Special exhibits will feature Agricultural Education, Research, Forestry, Horticulture, Handicrafts, Honey and Cheese. Overseas visitors may secure Show Badges and free admission on prior application to the Secretary, Royal Highland and Agricultural Society of Scotland, 8 Eglington Crescent, Edinburgh 12.

British Consulate General, Chicago

Past Meetings

Minnesota Beekeepers Meet

The Minnesota Beekeepers' Association held their winter meeting at the Curtis Hotel in Minneapolis, Minn., on December 10. A good program was presented by C. D. Floyd, state apiarist, and a number of speakers informed the members of many new developments which were of interest to beekeepers.

Dr. Thomas Gochnauer gave a report on apiary diseases and the research which he has been conducting. Dr. Austin Haws spoke on the sweet clover weevil, methods of control and its relationship to seed production. Mr. Henry Schaefer spoke on American Beekeeping Federation, its problems, and objectives.

Allen Peterson spoke on red clover and bees and informed the audience that bees do collect nectar from red clover in this area when conditions are favorable. Dr. M. H. Haydak gave an interesting talk on beekeepers' research at University Farm and told us that soy bean flour alone does not have sufficient protein for prolonged brood rearing but by adding other ingredients the substitute could be the means of producing much brood. Kenneth Tucker presented some very interesting data on a four year summary of research on alsike clover and bees.

Mrs. Emma Schmidt Arens was elected president and Miss Frances Sundberg (1954 Minnesota Honey Queen) was selected so serve as secretary-treasurer.

E. F. Bea

Wisconsin at Wausau

At the recent meeting of the state association, Mrs. Arthur Schultz, of Ripon, was re-elected president of the Woman's Auxiliary for the state. She will serve her third year in that capacity. Mrs. Otto Koepsel, of Mayville, was chosen vice-president and Mrs. Felix Elsinger, Knowles, secretary-treasurer.

State Officers Elected

V. G. Howard, Milwaukee, was re-elected president of the Wisconsin State Beekeepers Association at the close of its annual convention. Elected were Mark Osborne, Beloit, first vice-president, and Henry Piechowski, Red Granite, second vice-president. Re-elected were Allan Vosburg, Fort Atkinson, corresponding secretary, and Mrs. Louise Brueggeman, Menomonie Falls, recording secretary and treasurer. The next annual convention will be in Viroqua in 1956.

Woodman Diamond Jubilee Catalog

The Woodman Company of Grand Rapids, Michigan are announcing in their 1956 bee supply catalog the 75th anniversary of the establishment of the Woodman firm. Louis C., Albert G., and A. Baxter C., have in turn assumed direction of this fine firm, whose anniversary was also celebrated by the Michigan State Association last summer.

Beekeepers' Patron Saint

A question by one of our subscribers led us to write to our old reliable correspondent in Britain for information. The following was Dr. H. Malcolm Fraser's answer in part.

"St. Ambrose, the patron saint of beekeepers, was the son of a Prefect in Gaul. He was born about 340 A.D., but neither the place nor the date are accurately known. He studied law, and became prefect of Liguria and Emilia, the capital of which was Milan. When the Arian bishop, Auxenthias, died in 374 he, though a layman, was elected Bishop and remained in that position until his death in 397, since when he has been regarded as the Patron Saint of Milan.

"He is famous for his defense of the Doctrine of Trinity and for his stern rebuke to the emperor Theodosius for permitting massacres. A form of chant is known by his name and amongst his writings is an encylopedia known as the Hexameron."

We hope at some later date to quote article from "The Bestiary" (a natural history) on St. Ambrose-Hexameron as submitted to us by Dr. Fraser.

More On Royal Jelly

The February number of "Nuevo Mundo en la Medicina" (Mexico City) contains a 6 page illustrated article on Jalea Real (Royal Jelly) with fine illustrations.

HARPER'S FAMOUS
High Quality
Italian Queens and Package Bees

Quantity	1 to 24	25 & Up
2-lb. pkge. w/q	$3.25	$3.00
3-lb. pkge. w/q	4.25	4.00
4-lb. pkge. w/q	5.20	5.00
5-lb. pkge. w/q	6.15	6.00

Queens— 1 to 9—$1.10 ea.; 10 & Up $1.00 ea. Bees are Very Prolific and Extra Good honey Gatherers. Please send your order and preferred shipping dates to us early.

CARLUS T. HARPER
New Brockton, Ala.

Bee Diseases Up-to-Date

How to Use Drugs in Disease Control
A complete descriptive sheet, giving the appearance of American foulbrood, European foulbrood and Nosema Disease. Dosages of drugs, in liquid and dust form and combined applications. Send for a copy. It is for free distribution.

PRICES OF DRUGS

Sulfathiazole

2 Oz. Sodium, 75 feedings	$ .85
8 Oz. Sodium, 300 feedings	2.80
1 Lb. Sodium, 600 feedings	5.30
10 Lb. Sodium, 6000 feedings	38.35
25 Tablets, wt. 4 oz.	.50
500 Tablets, wt. 2 lbs.	4.60

Terramycin

4 Oz. TF-25, 58 feedings, wt. 1 lb.	$ 3.25
1 Lb. TF-25, 460 feedings, wt. 2 lbs.	11.95
10 Lbs. TF-25, 4600 feedings wt. 13 lbs.	74.20

Fumidil B

½ gram Fumidil-B, 5 to 6 feedings, wt. 4 oz.	$ 2.40
9½ grams Fumidil-B, 100 to 120 feedings, wt. 1 lb.	28.50
57 grams Fumidil-B, 600 to 720 feedings, wt. 7 lbs.	127.50

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60 lb. Honey Cans
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Items from Here and There

Egyptian Bulletin

The Agricultural Experiment Station at Taheer Province in Egypt has issued a bulletin on the operation of the two-queen system written by Dr. A. K. Wafa, Professor of Economic Entomology. Unfortunately we are not masters of Egyptian so are unable to review the 80 page bulletin. There are a number of references to U. S. and Canadian authors and their work on this subject.

Bottle Matings

In "Courier Apicole Francaise," March-April, a writer claims that he introduced two queens into a wide-mouthed bottle. Before they got to fighting he introduced several drones into the bottle with them. He claims to have gotten matings within the bottle, 7 out of 8. He says if the drones do not go directly for the queens, more patience is required. The bottle should be shaken to mix them up.

You might ditch your inseminations and try this instead.

Honeybees Attending Queen

According to M. Delia Allen of N. Scotland Agricultural College (Brit. Jn. Animal Beh.) bees of all ages attend and feed the queen. Usually only one or two bees (maximum five) supplied the queen with food between each period of egg laying.

"Wake Island Honey Is Good"

William L. Worden says so in his excellent article in the Saturday Evening Post of January 28, entitled "Exiles on a Pinpoint." Henry J. Down of Kincardine, Ontario, in his book "The Honey Plant" wrote about Wake Island honey, and William J. Stevens, Jr., of the Post editorial staff, sent the complete story.

Homer Willis has a half dozen hives of bees on the pinpoint of Wake Island, a coral blob of four square miles, "a million miles from nowhere" in the western Pacific Ocean. The 500 people on this sunshine-everyday, whistle-stop are CAA workers, employees of Pan American or Trans-Ocean Airlines servicing bases, a Standard Oil fueling crew, and a handful of U. S. Coast Guardsmen. There are also some Samoans, Asians from Honolulu and Filipinos.

Three million people have stepped on this coral dot - the trans-Pacific airline passengers. Wake Island has a

DADANT'S STARLINE HYBRIDS
Reg. U.S. Pat. Off.

Three Banded Italian bees and queens. Extra good workers, very gentle. Dadants Starline Hybrids bred for the best of honey production. 1 to 25—$1.60; 25 to 100—$1.50; 100 up—$1.40.

Our regular strain 1 to 25 $1.30; 25 to 100—$1.20; 100 up—$1.10. Packages—2 lb. with queen $4.00; 3 lb. with queen $5.00. For packages with Starline queens add 30c per package.

ALAMANCE BEE CO.
Graham, North Carolina
Phone 4703 or 7896

Johnson Dovetailing Equipment
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Write for details.
Carl E. Johnson Company
1557 Gregory Avenue
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QUEENS
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With each order—health certificate, full weight, live arrival guaranteed.

2 lb. pkg. with queen	$3.00
100 or more	2.75
3 lb. pkg. with queen	4.25
100 or more	3.90

Queens — each $1.10

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California Caucasian Queens
Gentle and from high producing stock
1-11—$1.50 12—49, $1.25
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Quality and Service Doesn't Cost . . . It Pays
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Bright Three-Banded Italians
Queens—1 to 50—$1.25 each; 50-up—$1.00.
2-lb. pkgs. with queen—1 to 50— $4.00 each, 50-up—$3.75; 3-lb. with queen—$5.00, 50-up—$4.75.
We guarantee safe arrival.
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Box 249, Luverne, Ala.

Package Bees — Italian Queens

All queens tested for laying

	1-24	25-99	100 up
2 lb. w/q.	$3.25	$3.10	$3.00
3 lb. w/q.	4.15	4.05	3.90
Queens	1.15	1.00	.95

After June 1st, price 75c for queens

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Dadant's Foundation For Bulk Comb Honey

A special, light colored foundation, somewhat heavier than thin super, but lower in price.

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QUALITY QUEENS
Leather Italians
Live Delivery Guaranteed
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J. C. RIVES
P.O. Box 1289 Redding, Calif.
Will Appreciate An Order From You.

war-torn history but is peaceful now. The Japs beat up our boys there and they, in turn, got a drubbing.

What we would like to know, Mr. Willis, is how your bees make honey.

Acarine and Nosema In Britain

Reprinted from Bull. of Ent. Research, Jan '56, is Jeffree, Morison, Murray, Allen review of Acarine and Nosema 1925-1947. Acarine reaches its low in the months of April, May and June, while Nosema has its highest incidence during these same months.

History Shows Honey Popular Energy Fuel Even With Gladiators

The value of honey as a source of ideal energy fuel is by no means a modern discovery. It was the popular energy food even back in the days of ancient Greece when athletic competition assumed an even more important role than it does now.

In the historical writings of those days frequent mention is made of the diet habits of the gladiators and athletes who often competed to the death. Oatmeal cakes and honey seem to have been the most popular food for athletes in training.

Probably, the selection of honey as a training food was not backed up by the facts known today, but through experience the ancient trainers and athletes arrived at the same conclusions. The fact that honey has been the popular training food it has for these many years (it's more popular than ever now) is a testimonial that certainly carries a lot of weight. Here is a real "time tested" food.

(from Sports College News, Toronto, February)

The Canadian Honey Crop

December estimates by the Dominion Bureau of Statistics at Ottawa indicate a 1955 honey crop of 24.6 million pounds, or a 24 per cent greater crop than in 1954.

In 1955, 54 per cent of the honey crop was produced in the prairie provinces and 42 per cent in Ontario and Quebec; in 1954 the prairies accounted for 43 per cent and Ontario and Quebec for 50 per cent.

The necessity of importing honey into Canada not only arises from their very active honey promotion campaigns, but also from the fact that there are fewer colonies to gather the crop than a few years ago.

The Canadian average from 1944-53 was 29,000 beekeepers with 477,000 colonies while the 1955 count was 13,900 beekeepers with a total of 321,000 colonies of bees, a very slight reduction over the 1954 count.

Flowers' Quality Italians

That stand test for honey gatherers; gentle; prolific.
Queens bred from hives making 300 lbs. and over of Honey
Fumagillin fed grafting and queen yards, HEALTH CERTIFICATE with each shipment.
All packages F.O.B. Jesup.

Quantity	1-24	25-100	101-up
2-lb. pkg. w/q.	$3.25	$3.00	$2.80
3-lb. pkg. w/q.	4.00	3.75	3.50
4-lb. pkg. w/q.	4.75	4.50	4.25
5-lb. pkg. w/q.	5.50	5.25	5.00
QUEENS mated and laying	1.00	1.00	.90

TESTED QUEENS $2.00. All queens del. airmail. Prompt, live delivery guaranteed. Place orders now. Early orders have priority.

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$1.35	$1.25	$1.15

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OUR SPECIALTY
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Condensed to save you time.
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1 yr. $1.50; 2 yrs. $2.50; 3 yrs. $3.25
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QUALITY SUPREME
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Standard Brood Frames	$12.25 per 100
Standard Hive Bodies	9.25 per 5
5⅜" Supers empty	5.95 per 5
6¼" Supers empty	6.95 per 5
Wood Covers	6.15 per 5
Cypress Bottoms	6.35 per 5
Queen Excluders	12.50 per 10
Sodium Sulfathiazole	$ 4.50 per pound
M.F. Powder Sulfa	4.50 per pound
Terramycin 5	43.00 per 50lb. pack (2000 feedings)
Terramycin 5	1.25 per pound (40 feedings)
Fumidil B	24.50 per 9.5 gram bottle
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SUE BEE Aluminum Paint	4.35 per gallon

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1956 prices F.O.B. Hampton, S. C.	Queens (each)	2-lb. & Queen	3-lb. & Queen	4-lb. & Queen	5-lb. & Queen
1 - 24 pkgs.	$1.15	$3.75	$4.75	$5.75	$6.75
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Quantity	Queens
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10-49	1.25
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Q - U - E - E - N - S each . . . Air Mail . . . 85c

2-lb. pkg. with queen exp. collect or not postpaid...each $3.00
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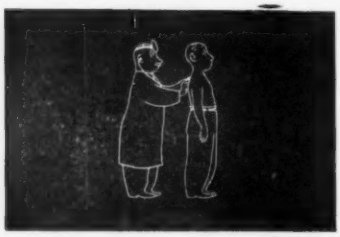

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Young, laying untested queens
1-24—$1.00; 25-99—$0.95; 100-up $0.90
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SPEARS APIARIES, Simmesport, Louisiana
Italian queens and workers that are quiet, pleasing to the eye, and industrious.

	1-50	50 or more
2 lb. pkgs. w/q	$3.25	$3.00
3 lb. pkgs. w/q	4.25	4.00
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Queens 75c after May 15. *Live delivery guaranteed — Satisfaction assured.*

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Editorial . . .

Honey Support Price Is Too Low

The 1956 Loan and Purchase Agreement Program for honey as set up by the United States Department of Agriculture and published elsewhere in this issue is, in the opinion of your Officers and apparently those in the production end of the business as evidenced by the resolution passed at Biloxi, considerably below a desirable level and especially so when the increased costs of production in the last five year period are considered.

It is quite apparent that United States Department of Agriculture officials have not taken these increased costs into consideration in establishing the program at the present level for 1956, nor have they considered the fact that the period from 1946 through 1950 used as a base period, contains two of the industry's poorest marketing years.

If the Support Price differential between eastern and western states had been removed as requested by resolution, the effect of lowering the support level another 2c on top of a 3c reduction last year would not perhaps be so demoralizing to the industry.

Under the present schedule, which places the western states at a very distinct disadvantage, the support figure for light amber honey in the western area will be under 8½c per pound. Can you stay in business if the market should fall to that price level, with today's high production costs: We doubt it, and on the other hand we can see no reason why it should fall to that level if we continue to intensify our promotion activities and programs.

The Support Program at the present level cannot even be considered a floor that would prevent disaster, to say nothing about providing cost of production. This program has previously been the largest single stabilizing influence the industry has ever had. Its benefits to the industry cannot be measured in dollars and cents and the operation of the program has been one of the most successful of any of the Price Support Programs. At the announced 1956 level, its value to the industry becomes questionable and particularly so if a large early crop is secured in southern and western areas, which might have a tendency to create pressure on the producers to sell at or slightly above the support level in those areas and thus establish a very low market for the entire country.

We hope that the program as announced will not have such a demoralizing effect on the industry that the number of colonies will be reduced (the number of colonies declined 4% in the nation in 1955) to the point where insufficient colonies will be available for the pollination necessary to provide the increased legume seeds needed for a well balanced agriculture and the needs of the Soil Bank Program, if it is adopted by the present Congress.

The program need not necessarily be considered as the market level, and as an industry we must take steps to insure continuation of our present market level if we are to continue in the business. And, too, the program can still be a stabilizing factor in our market if we use it wisely.

The officers urge you to make full use of the program by securing loans through CSS or your local bank for your current financial needs and hold your crop until the market can absorb it at a decent level.

We have been promised that if we get into difficulty market-wise the *Export Subsidy Program will be immediately reinstated,* which would have a tendency to remove any surplus above normal requirements.

Our future honey market lies in increased domestic consumption and not in a price support program.

We must intensify our promotion efforts and continue to further establish orderly marketing of our crop to the point where we can say the Support Program was a crutch to lean on, even if at the present level it's a pretty wobbly crutch.

(from the March-April Federation News Letter)

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Bigger crops

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MOUNTAIN GRAY CAUCASIAN queens—$1.25. After June 1st, $1.00. Elbert S. Childs, 3221 Garden Dr., Knoxville 18, Tenn.

CARNIOLAN — CAUCASIAN—2-lb. package, $3.50; 3-lb. package, $4.50 each. Queens, $1.00 each; $85.00 per 100. Tillery Bros., Greenville, Ala.

GOOD PACKAGE BEES and QUEENS for 1956—Young three-banded Italians. Gentle and good honey gatherers. New cages, more than full weight of bees. Treated for the prevention of Nosema. No F.B. 1200 full colonies and 1500 nuclei to draw from. Years of experience shipping to many parts of the world. Shipping season opens about April 5. 2-lb. pkgs. with queens, $4.00 each; 3-lb. pkgs. with queens, $5.00 each. 5% discount on orders totaling $100.00 or more; 10% discount on $200.00 or more. Select young laying queens, $1.35 each; 25 to 99, $1.25 each; 100 or more, $1.15 each. Small orders can be sent by parcel post. Large orders go best by express. H. C. Short, Fitzpatrick, Ala.

BRIGHT ITALIANS—3-lb. with queen, $4.75; 2-lbs. with queen, $4.00. F.O.B. Aberdeen. Queens, $1.25 postpaid. Health certificate and live delivery guaranteed. Sheppard's Apiaries, Aberdeen, N. C.

GOLDEN ITALIAN QUEENS—Fumidil-B-fed. Bees are very large and gentle, and heavy honey producers. Price 75c each. Guaranteed live arrival and health certificate. Allen H. Gauthier, Hamburg, La.

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DARK ITALIAN QUEENS—600-lb. strain, bred for production, $1.00. With 2-lbs. of bees, $2.95; with 3-lbs. of bees, $3.80. Henry Loehr, Caldwell, Texas.

ITALIAN QUEENS—$1.00 each. Shipment starts April 20th. Cleve Sprouse, Jr., Rt. 3, Woodruff, S. C.

THREE-BANDED Italians queens. Gentle, prolific, good honey gatherers, fast build-up, minimum swarming. You get all these qualities when you requeen with our superior strain of queens. Prices to June 1st, 1 to 24, $1.15; 25 to 99, $1.10; 100 up, $1.00. Prompt shipment and live delivery guaranteed. All queens airmailed. Shipments begin April 20th. Dixie Honey Company, Belton, S. C. Phone 5141.

GOLDEN ITALIAN queens $1.10 each. Guaranteed to please you. Air mail. Hignite's Bee Farm, 230 So. Lynchburg Rd., Baytown, Texas.

AVAILABLE IN APRIL AND MAY FOR THE FIRST TIME, the Yankee strain. Quality queens for maximum honey production. $1.35 each until June 1st. The Stricker Apiaries, Annandale, N. J.

WILL FILL YOUR CAGES with booster bees for 65c pound after May 15. Valdosta Honey Co., Valdosta, Ga.

CAUCASIAN QUEENS $1.00 each. C. B. Epping, "Idlewilde," Covington, Virginia.

CAUCASIAN QUEENS—Very hardy, gentle, good workers, personally raised. Select untested laying, $1.20 each. Fred Brock, McDonald, Tenn.

CARNIOLAN and CAUCASIAN queens—$1.00 each. Shipment starts April 20th. I have the late Albert G. Hann strain of bees. Build up fast, make lots of white comb honey. Gentlest of all bees. All queens sent air mail. A few package bees—2 lbs. with queen, $4.00; 3 lbs. with queen, $5.00. Roy Waddell, Rt. 3, Woodruff, S. C.

Copy for this department must reach us not later than the tenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

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As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on comb must guarantee them free from disease or certificate of inspection from authorized inspector. The conditions should be stated to insure that buyer is fully informed.

GOLDEN ITALIAN QUEENS at 75c each. Live arrival and health certificate with each order. Alvin J. Ducote, Hamburg, Louisiana.

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SUPERS with frames, supers no frames, tops, bottoms, queen excluders. All 10-frame size, factory Root made. Honey pump, 4-frame extractor, gas engine. Pet Farm, Fort Dodge, Iowa.

100 ten-frame colonies with one super boiling over with bees. $10.00 per colony. A. V. Dowling, Valdosta, Ga.

PURE ROYAL JELLY—One ounce, $20.00; one pound up, $15.00 per ounce. B. A. Anderson Co., Opp, Ala.

350 shallow extracting supers, $1.50 each, with drawn combs. 125 ten-frame hive bodies. 125 bottom boards, $1.00 each. All ten frame equipment, painted, patented, ready to go. 200 60 lb. honey cans, 25c each. Will sell all or any part. T. E. Woodrum, Rt. No. 2, Neosho, Mo.

140—10-frame comb honey supers with section holders and separators, $1.25 each. One 2-frame reversible extractor, $25. One 1-frame extractor, $7.50. Ed Varney, 854 Emerson, Sheridan, Wyo.

FOR SALE—Two frame swinging basket extactor, $26.00. Root four frame automatic reversing extractor with V belt and power attachment, $60.00. Both look and run like new. Also cleaned, used 10-frame dovetailed factory-made newly painted beeway comb honey supers with holders and separators, 65c each. Fred Peterson, Alden, Iowa.

FOR SALE—One Root 20-frame radial extractor like new, with adjustable motor mount. Write to Vernon Reuter, Box 131, Milford, Indiana.

ROYAL JELLY produced fresh year around. Use it on burns. Price, $20.00 per oz. O. K. Anderson & Son, P.O. Box 193, Coffee Springs, Alabama.

FOR SALE—Honey house located in alfalfa-sweet clover section eastern Nebraska. Approximately 60'x28', inside truck pit. Box 55, c/o American Bee Journal.

FOR SALE—A large quantity of foundation priced for quick sale. State size needed. Walter Roose, Sac City, Iowa.

FOR SALE—One hundred colonies in ten-frame standard equipment. Located in Northwest Iowa. Write Box XR, c/o American Bee Journal.

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Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

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Oconomowoc, Wisconsin

HONEY WINE, 40 others, $1.00 John Hall, 406 N. Plum, Northfield, Minn.

FOR SALE—About 80 ten-frame bodies with combs at $2.50 each. Also other equipment. Fred J. Kessler, 903 N. Water St., Watertown, Wis.

HONEY and BEESWAX WANTED

WE ARE PAYING top market prices for beeswax. Ship to any one of our plants: Sioux City, Iowa; Lima, Ohio; Rogers Texas; Waycross, Georgia; Anaheim, California. Sioux Honey Association, 509-11 Plymouth St., Sioux City, Iowa.

WANTED — Any quantity amber honey Russell Griggs, Hancock, Iowa.

WANTED—Honey and beeswax. State what you have and price. Roscoe F. Wixson Dundee, N. Y.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 2613 South Yates Ave., Los Angeles 22, Calif.

WANTED—Honey, amber or light, in any amount. Send sample for prices. Holland Honey Cake Co., Holland, Mich.

WANTED—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted Mich.

WRITE FOR SHIPPING TAGS and current quotations on rendered beeswax. Any amount from one pound up bought. If you have 25 pounds or more, save 25% by letting us work it into foundation for you. Walter T. Kelley Co., Clarkson, Ky.

HONEY FOR SALE

WHITE CLOVER HONEY in sixties. Ralph Gamber, 910 State, Lancaster, Pa.

CLOVER HONEY in sixties. Thos. Atkinson, Rt. 5, So. Omaha, Nebr.

FOR SALE—two truck loads of white clover honey in new sixty pound cans. Baxter Honey Farm, Blair, Nebraska.

SEVERAL CHOICE LOTS top quality Colorado extracted honey, 5-gallon cans or will pack with your label. Superior Honey Company, 4242 Elizabeth St., Denver 16, Colorado.

650 60's of white honey. John Burghardt Apiaries, New Ulm, Minn.

POSITIONS AND HELP WANTED

WANTED—Full time Bee Inspector. Must be experienced in working with bees. Good wages, car, and expenses furnished. Reference required. Write—Bureau of Plant Industry, State House, Lincoln, Nebraska.

AVAILABLE—Energetic graduate student and backyard beekeeper to work bees this season. Write Malcolm Brown, Berkshire School, Sheffield, Mass.

WANTED

WANT 50-frame size cappings spinner. Loren Miller, Greenbush, Minnesota.

WANTED—Queen excluders. State condition, price. Hubert Martin, Dryridge, Ky.

SUPPLIES

THE BIGGEST BEE SUPPLY CATALOGUE PUBLISHED (64 pages) free for the asking. Big factory manufacturing a complete line of wooden goods, comb foundation, metal goods, veils and gloves, carloads in stock, daily shipments, save 20%. WALTER T. KELLEY CO., CLARKSON, KY.

BRAND MELTERS and all kinds of bee supplies. Catalogue free. Hodgson Bee Supplies Ltd., 565—13th Ave., New Westminster, B. C.

WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Mich.

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HONEY PLANTS our specialty. Catalogue on request. Pellett Gardens, Atlantic Iowa.

MISCELLANEOUS

PLAIN or WAVYWIRED foundation. Beeswax rendered and purchased. Wax Workers, Ithaca, N. Y.

KNOW interesting facts about the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarth, Dist. Nainital, U.P., India, and obtainable from them. Subs. Rs9/-. or S.15/-, or $2.25 yearly.

Sample copy, post free, Rs. ½/-, or S.2/6 or 40c (International money order). Payment in mint postage stamps of your country accepted.

RANCH MAGAZINE—Do you find it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information of range sheep than any magazine published. Subscription $1.00. Hotel Cactus, San Angelo, Texas.

BEES removed from house or tree to hive without touching either house or bees. Bees will then move honey into hive. Save property, honey and bees with my method. Send $2 for details. Satisfaction guaranteed. George Hawkins, Rt. 1, Lawson, Mo.

DADANT'S FOUNDATION FOR BULK COMB HONEY

For bulk comb honey for glass containers and for cut comb honey for cellophone wrappers or cartons. This is a special, light colored foundation, somewhat heavier than thin super, but lower in price. Bulk comb honey packed in glass must be white and beautiful, and it must be surrounded with an equally fine grade of liquid honey. Then you have beautiful packages that customers just want to buy.

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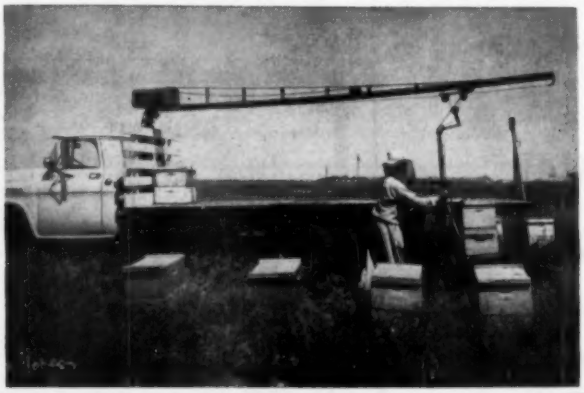

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DON-LO LOADER

Save Your Back — Save Labor Costs

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★ Easy to Use
★ 6 or 12-Volt System
★ Low in Price

Write for Circular and Name of Nearest Distributor

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	ITALIANS	CAUCASIANS	
	1-24	25-99	100-up
2 lb. pkg. w/q.	$4.00	$3.75	$3.50
3 lb. pkg. w/q.	5.00	4.75	4.50
Queens	1.35	1.25	1.15

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— A Modern Theory on Swarming —

Get prepared for summer swarms. This booklet explains why bees build queen cells. They do not swarm from overcrowding. Send 25 cent coin to

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Italian Bees and Queens

2 lb. with queen $3.00
3 lb. with queen 4.00
4 lb. with queen 4.90
Extra queens $1.00 each
I will try to satisfy you

Raymond McFarling
Rt. 3, Tupelo, Miss.

USE ABJ ADS —THEY PAY

BOOST YOUR INCOME

DADANT'S STARLINE HYBRIDS Reg. U.S. Pat. Off.

without adding more colonies or doing more work. By actual test Starline Queens produce more honey than any other stock tested. You owe it to yourself to give them a trial.

Now booking orders for Packages and Queens for shipment beginning March 20.

ADGA

J. M. CUTTS & SONS Box No. 336 Chipley, Florida

BEES QUEENS

Rearing Italian bees and queens of reliable quality is our only business.
46 years' experience

	1-9	10-50	51-up
2-lb. pkg. with queen	$4.00	$3.75	$3.50
3-lb. pkg. with queen	5.00	4.75	4.50
4-lb. pkg. with queen	6.00	5.75	5.50
5-lb. pkg. with queen	7.00	6.75	6.50
Queens	1.35	1.25	1.15

Our strain are good producers, gentle to handle and build up quickly.

W. E. PLANT Rt. 2, Hattiesburg, Miss.

Dadant's New Improved Starline Hybrids and Garon's Three-Banded Italians

Share with others in the present favorable honey prices — Meet good prices with TOP PRODUCTION — A good way to accomplish this, is to stock with NEW IMPROVED DADANT STARLINE HYBRIDS and GARON'S THREE-BANDED ITALIAN Package Bees & Queens.

PRICES EFFECTIVE MAY 26TH:

	QUEENS		Package Bees With Queens		
	Italians	Starlines	2-lbs.	3-lbs.	4-lbs.
1-24	$1.00	$1.60	$3.30	$4.25	$5.20
25-99	.95	1.50	3.20	4.15	5.10
100-up	.90	1.40	3.10	4.05	5.00

— Add 25c per package for Starline Hybrid Queens —

Queens Clipped and/or marked, when desired, without extra cost.

GARON BEE COMPANY **Donaldsonville, La.**

— Honey Labels —

Our honey labels will tell your honey story, by word and picture to encourage sales. Our sample label catalog is yours for the asking.

Each label in complete color and each one separate (an actual label) to put on your container to see how it looks.

Choose Labels Wisely

AMERICAN BEE JOURNAL

HAMILTON **ILLINOIS**

Caucasian Queens

Gentle, heavy producing stock. 10% deposit books your order. Balance 10 days before shipment.

Airmail Postpaid—1 - 9, $1.40 each; 10 - 49, $1.15 each; 50 and up, $1.00 each.

CHARLES HESS

5505 Hackberry Lane Sacramento, California

— SMITH'S QUALITY —

We will have plenty of our high grade packages from May 10th. Order direct from these prices. Quality and Service our Motto.

	Queens	2 Lb. W. Q.	3 Lb. W. Q.
1-24	$1.15	$3.40	$4.20
25-99	1.10	3.20	4.00
100 up	1.05	3.00	3.80

Write for our SPECIAL OFFER during Summer Months.

N. B. SMITH & CO. Calhoun, Alabama

THREE BANDED ITALIAN BEES AND QUEENS

	QUEENS	2 lb. w/q.	3 lb. w/q.
1-24	$1.25	$3.50	$4.50
25-99	1.15	3.25	4.25
100-up	1.00	3.00	4.00

Queenless Packages deduct price of queen. — *Live delivery guaranteed - No disease*

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ITALIAN QUEENS

$1.25, Each (up to 51)

In larger lots, write for prices

Queens raised from heavy-producing stock.

Health Certificate

BEES—2-lbs...$3.75 3-lbs...$4.75

What have you to trade?

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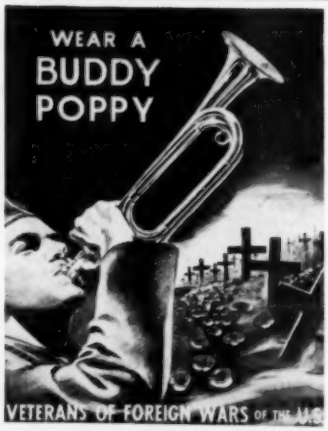

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For Quality and Service

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Italian Bees and Queens—Queens, 1 to 25, $1.10; 26 up, $1.00; Bees—2 lbs., 1 to 25, $3.50; 26 up, $3.25; 3 lbs., 1 to 25, $4.50; 26 up, $4.25. 20 years' experience in queen breeding. Live delivery guaranteed. Owned and operated by J. H. MOODY and W. L. STRENGTH, P.O. Box 413, Prattville, Ala. Phone 4752.

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HOLLOPETER'S Italian Queens

Young laying Queens, return mail, $1.00 each

WHITE PINE BEE FARMS

Box 800 Rockton, Pa.

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KELLEY—"The Bee Man"

KELLEYS ISLAND stock queens grown on our own bee farm and rushed out daily from Clarkson by air mail.

1-24 Prepaid air mail	$1.25 each
25-99 Prepaid air mail	1.15 each
100 and up Prepaid air mail	1.05 each

WALTER T. KELLEY CO.

Clarkson, Kentucky

Are You Losing Beeswax?

We render old combs, cappings, and slumgum for beekeepers. Our steam wax presses get every available ounce of wax out of this material.

Save all your wax, combs, and cappings. Clean, rendered wax may be shipped to us in any quantity, large or small. Combs, cappings, or slumgum should be accumulated and shipped by freight in lots of 100 pounds or more.

Send for terms. Ship us your Beeswax. Prices are high.

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Dadant & Sons, Inc.

Hamilton, Illinois

Paris, Texas **Hahira, Georgia**

Dadant's Plain Foundation

Without wires for those who have their own way of assembling and wiring foundation. The cells are sharp and clear cut with strong side walls and good, solid bases. This foundation has been made by Dadants for over seventy-five years. Each sheet is inspected so you get only perfect ones, in tissue packed, tight fitting cartons.

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High Quality Products
Fast Service
Low Prices

Write Today For Free 1956 Bee Hive Catalogue

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HIGGINSVILLE, MO.

LIGHT ITALIANS

Higher production
Gentler bees
Better service

Write for prices.

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Box 166 Petal, Miss.

Caucasians
Packages for 1956
D. T. WINSLETT
7736 Auburn Rd. Citrus Hgts., Calif.

THRIFTY BEES
Combless Packages and Queens.
Three-banded Italians only.
Write for 1956 prices and REMEMBER—THRIFTY BEES ARE GUARANTEED TO PLEASE.
W. J. FOREHAND & SONS
Fort Deposit, Ala.
Breeders Since 1892

25 cents for 8 - 9 oz.
of your honey in our plastic comb honey section
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Our new HONEY HANDLING CATALOG gives suggestions for ideal equipment in extracting and packing honey in various quantities. COPY ON REQUEST.

DADANT & SONS, Inc.
HAMILTON, ILLINOIS

Spring of 1956
ITALIAN BEES AND QUEENS
3 lbs. with queen.....$3.75
4 lbs. with queen..... 4.50
Health certificate, full weight, and live delivery guaranteed.
THE STAR BEE FARM
R.F.D. Box 59 Hessmer, La.
Phone—Marksville 2449

THREE BANDED ITALIAN BEES AND QUEENS
2 lb. pkg. with young queens..$3.25
3 lb. pkg. with young queens.. 4.25
Extra queens $1.25 each
J. P. CORONA
P.O. Box 124 215 Farrar Ave.
Phone Ke-4-4394, KENNER, LOUISIANA

Crops and Market

by M. G. Dadant

Winter Losses

In the extreme northern sections it is yet too early to get exactly the losses but as general throughout the United States the losses have not been excessive. Prolonged cooler weather in northern areas has prevented the early gathering of nectar and pollen no doubt there will be shortages of both pollen and nectar in the hives and the possibility of additional losses if bees are not properly watched and fed.

Otherwise losses throughout the United States do not seem to be excessive. Perhaps 5 to 10 per cent loss in most areas with considerably larger per cent reported in Alabama, Mississippi, Louisiana, and, of course, the usual larger losses in the intermountain territory.

On the whole, probably no heavier loss than a year ago and in many instances less.

Condition of Bees

As noted above, bee conditions have been held back by cooler weather in northern areas and equally so in the intermountain territory. On the whole, however, bees are in quite satisfactory condition where they have been carried through the winter although perhaps more feeding than a year ago will be necessary. This is partly compensated for by the fact that many of the larger beekeepers left their bees with more than ample stores for the season, so are not doing as much feeding. In the dry areas of western and southern Texas, there seems to be a considerable amount of feeding and this also is true in Florida where dry conditions have stopped any possibilities of flow from the plants after the orange bloom.

Honey Plants

Honey plants generally are in better condition than a year ago. The dry conditions, of course, in the plains territory and in southern Georgia, and Florida have not been favorable to honey plants and we hear some reports that gallberry in the latter areas will perhaps not yield unless there is more moisture forthcoming.

On the whole, however, honey plants have sufficient surplus moisture outside of those areas previosly mentioned although subsoil moisture does seem to be somewhat deficient.

Honey Wanted—Cars and less than car. Top Prices.
C. W. Aeppler Co., Oconomowoc, Wis.

Moisture

Here we come to the crux of the whole matter. Throughout practically all northern states and extending into New York and New England, as well as down the Atlantic Coast into the Carolinas, there has been ample moisture, and in some instances more than they have had in several years. This applies also to the Canadian provinces, British Columbia, for instance, reporting as much as 81 inches of snow. The intermountain territory seems to be in unusually fortunate position this year on account of heavier snows in the mountains and even some sections of eastern Montana and South Dakota which earlier reported dry, have had later snows which soaked into the ground owing to very little freezing ahead of the earlier snows.

In California, while there were dry conditions following the moisture earlier, late rains during mid-April have again rejuvenated the plant possibilities, and it looks like California might have the opportunity of something like a big crop this year providing conditions are favorable during the nectar flow. At the time this was written the orange was just beginning to yield.

Dry conditions are general extending from Arizona through New Mexico, Colorado, and into western Texas and all of Kansas, Nebraska and even into eastern Montana and eastern South Dakota. In fact while there is some moisture along the Missouri River sections it is mostly surface moisture as more rain is needed.

On the whole, moisture is generally short of average, honey plants perhaps better than average condition considering the lack of moisture, and bees in about normal conditions with perhaps heavier losses than usual in the Canadian provinces and in the northern tier of the states.

Honey

Honey is practically all cleaned up off of the markets and in fact some of the new crop of honey in the Southeast has already been purchased and is being used while some agencies are also already active in anticipating contracts for the new crop of honey. These, however, are on a price basis and will largely await definition until the crop materializes.

The Florida orange crop was about two-thirds normal.

Oldest Shipper in South — Thousands of Nuclei and Colonies — Experience Counts

Berry's "Old Reliable" Italian Bees Preferred by Leading Honey Producers

INSURE your honey crop with DEPENDABLE BERRY BEES. After sixty one years of breeding and selection our strain of Italian bees is unsurpassed by any stock, Hybrid or otherwise, for honey production, disease and Nosema resistance. "OLD RELIABLE" bees assure you that you have the best to be found. We maintain several branches in the Northwest States to test our strain for both climate and honey production. When a better stock is produced "Old Reliable" will be its name.

PRICES TO MAY 15TH:

Quantity	Queens	2 lb. W/Q	3 lb. W/Q	4 lb. W/Q	5 lb. W/Q
1-24	$1.25	$4.00	$5.00	$6.00	$7.00
24-99	1.10	3.75	4.75	5.75	6.75
100 up	1.00	3.50	4.50	5.50	6.50

PRICES FROM MAY 15th:

1-24	.95	2.95	3.95	4.95	5.95
24-99	.90	2.85	3.85	4.85	5.85
100 up	.85	2.75	3.75	4.75	5.75

For prices on queenless packages deduct price of queen; all prices F.O.B. Montgomery, Ala.

All our queens are selected; we have only one grade. Wings of queens are clipped free, on request. 90% of the bees in our packages are under ten days old. We guarantee safe arrival on all shipments. All orders will be filled on the dot unless weather makes it impossible. We have no disease. Our apiaries were the first in the state to be inspected and were found to be absolutely clean. Directions for handling and a Certificate of Health come with each shipment. Deposit of $1.00 per package required for booking; remainder of remittance in full, ten days before shipping.

References: Union Bank & Trust Co., Montgomery, Ala. Any Bee Journal in U. S. or Canada; any Extension Agent.

M. C. Berry & Son

M. C. Berry, Pres. Clinton C. Berry, Gen. Mgr.

P. O. Box 684 MONTGOMERY, ALABAMA

Sixty One Years with the Bees — Accredited and Certified — The Best in America

"Bee Wise — Woodmanise Your Bee Supplies"

A. G. Woodman Co. (Send for catalog—350 Listings) **Grand Rapids 4, Mich.**

REFLECTORIZED SIGNS

Beaded in glass—shines at night—Heavy metal, 14x20 inches, black on yellow. Flanged one end to nail on post or tree. New—different!!! Say "Honey" both sides. Postage extra. Wt. 3 lbs. Each, $2.00.

DADANT & SONS, Inc. Hamilton, Illinois

Package Bees and Queens
"Italians"

Wilbanks offers you tested stock proven for honey producing ability and easy handling. Satisfied customers through the years assure you of the greatest value here.

PRICES

	1-9	10-49	50 up
2 lb. pkg. with young laying queen	$4.00	$3.75	$3.50
3 lb. pkg. with young laying queen	5.00	4.75	4.50
4 lb. pkg. with young laying queen	6.00	5.75	5.50
Extra Queens	1.25	1.15	1.10

Shipments by Express, Parcel Post or your Truck.
Queen Yards and Package Bees fed Fumidil-B.

Quality Does Not Cost — IT PAYS

The Wilbanks Apiaries
Claxton, Georgia

HONEY WANTED ALL GRADES, SEND SAMPLES, ADVISE QUANTITY AND PRICE.
"EVERYTHING FOR THE BEEKEEPER"
HONEY SALES CO. 2817 No. 2nd St. MINNEAPOLIS 11, MINN.

YELLOW ITALIAN BEES and QUEENS
2 lb. package with queen $3.00; 3 lb. pkg.—$4.00. Queens 1 to 50—$1.00 ea. 51 to 99—95 ea.; 100 and up—90c ea. Air Mail. We guarantee health certificate and live arrival with each shipment.
OSCAR ARNOUVILLE Box 203, Hamburg, Louisiana

SUNKIST
Starlines **Packages**

Thoroughbred means QUALITY. In that sense, STARLINES are thoroughbred — for that name means quality. The best available.

PRICES — Packages with Starline queens

	Starline Q.	2 lb. w/q.	3 lb. w/q.	4 lb. w/q.
1-24	$1.60	$4.25	$5.25	$6.25
25-99	1.50	4.00	5.00	6.00
100-up	1.40	3.75	4.75	5.75

TELEPHONE LUTCHER 2645

SUNKIST BEE CO. Convent, La.

Price $14.25

The MASTER Electric Uncapping Knife
Ruggedly built for rugged service. Adjustable to your individual heat requirement.
Your dealer stocks them.
HUTCHISON MFG. CO.
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Santa Monica, Calif.

CAUCASIAN OR ITALIAN PACKAGE BEES AND QUEENS
FOR 1956
Gentle bees, less swarming, good producers, health certificate and live arrival guaranteed — just a few things you get when your requirements are sent to me.

	1-25	25-50	50-100
2 lb. pkg. w/q	$3.70	$3.45	$3.20
3 lb. pkg. w/q	4.60	4.30	4.00
4 lb. pkg. w/q	5.50	5.15	4.80
5 lb. pkg. w/q	6.40	6.00	5.60
Queens	1.20	1.10	1.00

FARRIS HOMAN Shannon, Miss.

Caucasian and Carniolan

Requeen your swarms and increase with young laying queens for quick buildup. Caucasian and Carniolan are the gentlest of all races of bees, build white comb, work in cool weather and not bad to drift into other colonies, hence less liable to disease. Laying queens $1.30 each Air Mailed. $2.00 each to foreign countries. No more packages this season — queens only.

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Certified Beeswax Salvage Plant
Custom Rendering
Bleaching and Refining
Foundation Manufacturing
both plain and wired.

Top Cash Market for Your Beeswax

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Colton, Calif. Phone 1722

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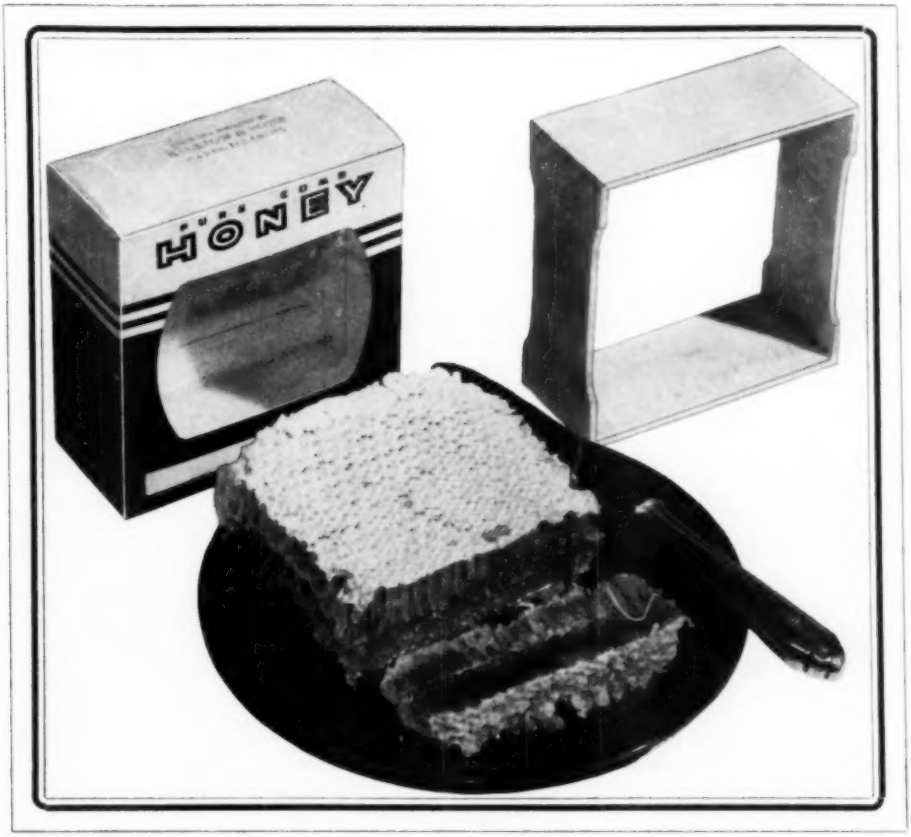
PACKAGE BEES and QUEENS
John S. Shackelford
Rio Oso, California

Yellow Italian Bees and Queens
Gentle bees, good producers. Health certificate and live arrival guaranteed.
2 lb. pkg. w/q $3.00
3 lb. pkg. w/q 4.00
Young laying queens, 1 to 50—$1.00 each; 51 to 99—95c each; 100 and up—90c each, by air mail.
JOHNNIE ARNOUVILLE
Box 106 Hamburg, Louisiana

CANADIAN BEE JOURNAL
Canadian beekeepers have much in common with their neighbors in the U. S. If you are interested in bee activities "North of the Border," send us your subscription NOW. Subscription price, $1.75 per year in U. S. A.
Canadian Bee Journal
Streetsville, Ontario, Canada

Palmetto Quality Queens
Mr. Beekeeper—Try our three-banded Italian Queens, that have been the delight of all beekeepers who have tried them for the last 32 years. Prices as follows: 1 to 10 at $1.00 each, 10 to 25 at 95c each, more than 25 at 90c each. No disease, prompt shipment. Phone 5141.
C. G. ELLISON & SONS
Belton, S. C.



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P.S. **Doesn't this comb honey look wonderful . . . a pleasure to serve. And it all started with Root's thin super foundation and fine basswood sections. Here is nature's confection . . . so tempting . . . so easy to sell in Root's handsome green and yellow cartons.**

Get your comb honey supplies from your nearby Root dealer or nearest factory branch at Medina, Ohio, Council Bluffs, Iowa or San Antonio, Texas.

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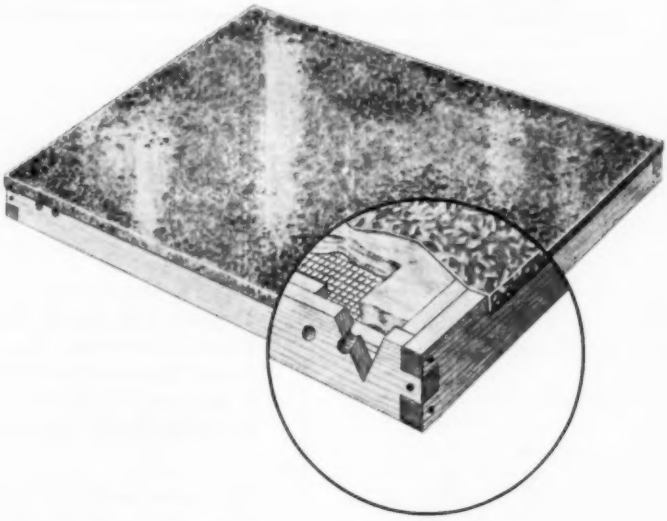

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Fast, immediate service right when you want it. Along with the best in bee supplies from Five Branches and 1000 dealers.